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WEST VIRGINIA UNIVERSITY

The 1962-63 Catalog

WEST VIRGINIA UNIVERSITY BULLETIN

CORRESPONDENCE

Correspondence should be addressed as follows:

ADMISSIONS AND RECORDS

Registrar

ALUMNI MATTERS

Alumni Secretary

CATALOG, ANNOUNCEMENTS

Registrar

EMPLOYMENT OF SENIORS AND ALUMNI

Placement Service

EXTENSION

Director of University Extension

HOUSING

On Campus: Director of Residence Halls

Off Campus: Housing Adviser

INFORMATION

Bureau of Public Information

MATTERS OF GENERAL UNIVERSITY INTEREST

The President

VETERANS AFFAIRS

Veterans Coordinator

WEST VIRGINIA UNIVERSITY, MORGANTOWN, W. VA.

SERIES 62, NO. 7-5 — WEST VIRGINIA UNIVERSITY BULLETIN — JANUARY, 1962

The *West Virginia University Bulletin* is issued monthly throughout the year. Publications included are the *Announcements* of the College of Arts and Sciences, the College of Agriculture, Forestry, and Home Economics, the College of Commerce, the College of Education, the College of Engineering, the School of Journalism, the College of Law, the Medical Center (the School of Dentistry, the School of Medicine, the School of Nursing, the School of Pharmacy, and Basic Sciences), the School of Mines, the School of Music, the School of Physical and Health Education, Recreation, and Safety, and the Graduate School; the Summer Session, and the Evening Education Program; the *General Catalog*, bulletins of the College of Engineering and the School of Mines; other scholarly and scientific publications; and the *Proceedings* of the West Virginia Academy of Science.

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The Board of Governors

	TERM EXPIRES
Forrest H. Kirkpatrick, *President*, Wheeling	1966
James H. Swadley, Jr., *Vice-President*, Keyser	1967
Charles C. Wise, Jr., *Secretary*, Charleston	1969
K. Douglas Bowers, Beckley	1962
Frank J. Zsoldos, Pineville	1963
William G. Thompson, Montgomery	1964
Raymond E. Salvati, Huntington	1965
Okey B. Glenn, Williamson	1968
Cyrus S. Kump, Elkins	1970
Paul Ausborn Miller, *Chief Executive Officer*, Morgantown	

The Board of Governors has charge of the educational, administrative, financial, and business affairs of the University and Potomac State College of West Virginia University.

ADMINISTRATIVE OFFICERS

General

President, Paul Ausborn Miller, B.S.Agr., M.A., Ph.D., (1962), 1938.
Acting President, Clyde Lemuel Colson, A.B., LL.B., S.J.D., (1961), 1935.
Comptroller and Director of Business Affairs, Louise Keener, B.A., (1954), 1929.
Development, Donovan Hiner Bond, B.S.J., M.A., *Director,* (1959), 1952.
Libraries, Robert Ferguson Munn, A.B., M.A., Ph.D., *Director,* (1957), 1952.
Provost, John Ford Golay, A.B., M.A., D.Phil. (Oxon.), (1961).
Registrar and Chairman of the Committee on Admissions, J. Everett Long, A.B., A.M., (1945), 1929.
Student Affairs, Joseph Clay Gluck, B.A., B.D., *Director,* (1949), 1943.
Dean of Women, Betty Boyd, A.B., (1955), 1948.
University Marshal, Sam Boyd, Jr., B.F.A., M.F.A., (1959), 1940.

Colleges, Schools, and Divisions

Air and Army ROTC, Jack Gillespie Milne, B.S., *Head,* (1958).
Agriculture, Forestry, and Home Economics, Ernest Joseph Nesius, Ph.D., *Dean,* (1960).
Agricultural Experiment Station, A. H. VanLandingham, Ph.D., *Director,* (1959), 1929.
Cooperative Extension Service, Ernest Joseph Nesius, Ph.D., *Director,* (1961).
Arts and Sciences, Carl Maynard Frasure, Ph.D., *Dean,* (1961), 1927.
Commerce, Thomas Corwith Campbell, Jr., Ph.D., *Acting Dean,* (1961), 1948.
Education, Earl Ruffner Boggs, Ph.D., *Dean,* (1960).
Engineering, Chester Abbo Arents, M.E., *Dean,* (1955).
Engineering Experiment Station, Walter Allos Koehler, Ph.D., *Director,* (1952), 1924.
Extension, University, Ernie Bevan McCue, M.A., *Director,* (1952), 1947.
Graduate, John Ford Golay, D.Phil. (Oxon.), *Dean,* (1961).
Journalism, Quintus Charles Wilson, Ph.D., *Dean,* (1961).
Law, Clyde Lemuel Colson, S.J.D., *Dean,* (1956), 1935.
Medical Center, Kenneth Earl Penrod, Ph.D., *Vice President,* (1959).
Dentistry, Kenneth Vincent Randolph, D.D.S., *Dean,* (1958), 1957.
Medicine, Clark Kendall Sleeth, M.D., *Dean,* (1961), 1935.
Nursing, Dorothy Mae Major, Ed.D., *Dean,* (1960).
Pharmacy Raphael Otto Bachmann, Ph.D., *Dean,* (1961).
University Hospital, Eugene Leo Staples, M.S., *Director,* (1960).
Nursing Service, Audrey Edith Windemuth, M.S., *Director,* (1960).
Mines, Charles Thomas Holland, M.S.E.M., *Dean,* (1961), 1930.
Music, Richard Edward Duncan, Ph.D., *Dean,* (1958).
Physical and Health Education, Recreation, and Safety, Ray Oscar Duncan, Ed.D., *Dean,* (1952).

Heads of Other Administrative Offices

Book Store, Ruth Eleanor Robinson, A.M., *Manager,* (1944), 1939.
Educational Broadcasting, C. Gregory Van Camp, A.B., *Director,* (1960).
Health Service, John Joseph Lawless, Ph.D., M.D., *Director,* (1944), 1935.
High School, University: Delmas Ferguson Miller, Ph.D., *Director,* (1960), 1949.
E. Grant Nine, M.S., *Principal,* (1960), 1956.
Information and Alumni Secretary, David Wood Jacobs, A.B., *Director,* (1938).
Intercollegiate Athletics, Robert Nathan Brown, A.B., *Director,* (1954), 1950.

NOTE: The first date following titles indicates latest appointment. The second date indicates year of first appointment to a University position.

Kanawha Valley Graduate Center of West Virginia University, Walter Hamilton Walker, Ph.D., *Director*, (1960).
Mountainlair, Robert F. McWhorter, M.S., *Director*, (1959).
Off-Campus Housing, Kenneth W. Shaffer, M.A., *Adviser*, (1961).
Parkersburg Branch, West Virginia University, Todd H. Bullard, M.A., *Resident Director*, (1961), 1956.
Personnel, Thomas Joseph Wall, M.Litt., *Director*, (1960).
Physical Plant, Clifton Wharton Flenniken, Jr., B.S., *Director*, (1961).
Placement, Margaret Cornelia Ladwig, Ph.D., *Advisor*, (1949).
Residence Halls, Agnes B. Hovee, M.A., *Director*, (1956), 1950.
University Editor, John Luchok, B.S.J., (1953), 1950.
Veterans Coordinator and Coordinator of Scholarships, Charles J. Sheehan, B.S.Ed., (1957).

Standing Committees

THE UNIVERSITY

ADMISSIONS: The Registrar and the deans of all colleges and schools admitting freshmen.

BOARD OF GOVERNORS SCHOLARSHIPS: F. J. Holter, Betty Boyd, C. H. Cather, J. L. Hall, J. E. Long, and M. L. Vest.

PHYSICAL FACILITIES: C. L. Lazzell, C. A. Arents, R. D. Baldwin, T. C. Campbell, Jr., A. R. Collett, C. L. Colson, R. E. Duncan, R. O. Duncan, J. C. Gluck, C. T. Holland, L. Keener, J. E. Long, J. G. Milne, R. F. Munn, E. J. Nesius, E. Orr, K. E. Penrod, G. E. Steyers, F. P. Summers, and Q. C. Wilson.

SPACE ALLOCATION: R. D. Baldwin, C. A. Arents, A. R. Collett, C. W. Flenniken Jr., L. Keener, J. E. Long, C. M. Morris, E. J. Nesius, and E. Orr.

THE SENATE

EXECUTIVE COMMITTEE: Acting President Colson (to January, 1962). President Miller (from February, 1962); D. H. Bond, J. L. Hall, Leo Fishman, H. P. Simons, H. C. Evans, D. T. Watts, and J. E. Long.

COMMITTEES: E. W. Crooks, Jr., N. M. Baughman, J. E. Ford, F. D. O'Connell, and Dana Wells.

ENGLISH PROFICIENCY: B. R. McGregor, V. Q. Alvis, E. C. Dubbe, R. E. Foster, H. E. Kidder, W. O. Morris, and A. R. Thomas, Jr.

EXTENSION: M. G. Brooks, J. A. Caruso, A. F. Galli, E. J. Nesius, ex officio; E. B. McCue, ex officio; C. M. Morris, C. T. Holland, ex officio.

FACULTY HOUSING: T. S. Isaack, J. D. Adams, J. H. Schaub, J. N. Shafer, and A. L. Sturm.

FACULTY WELFARE: J. G. Leach, W. W. Armentrout, A. J. Braff, W. G. Klingberg, and W. D. Lorensen.

INSTRUCTIONAL POLICIES AND PRACTICES: T. W. Gavett, R. D. Baldwin, H. N. Kerr, O. M. Neal, Jr., R. E. Rankin, C. P. Yost, and J. R. Young.

LIBRARY: R. F. Munn, E. C. Gangloff, M. T. Heald, G. L. Humphrey, C. M. Morris, Irvin Stewart, and J. H. Thompson.

MEMBERSHIP: L. M. Davis, H. N. Lindsay, and H. N. Rexroad.

PUBLICATIONS: V. J. Lemke, L. R. Bragg, E. L. Core, V. G. Lilly, John Luchok, ex officio; and G. H. Stewart.

RESEARCH: S. E. Dadisman, J. T. Anderson, T. C. Campbell, Jr., W. A. Kelliher, ex officio; R. F. Krause, Mortimer Levine, E. J. Nesius, ex officio; A. S. Pavlovic, J. R. Williams, and H. A. Wilson

STUDENT AFFAIRS: J. C. Gluck. Members to consist of the various chairmen of sub-committees on student affairs as appointed by the President.

Convocations: J. C. Gluck, B. R. McGregor, D. T. Watts; student members: James E. O'Donnell, Jr., Jacqueline Richardson, David Vaughn, and Mary Defibaugh.

Discipline: M. L. Vest, H. P. Pettigrew, and R. F. Krause.

New Residences: J. C. Gluck, L. R. Gribble, Stephen Harrick, and Cornelia Ladwig.

Off-Campus Schedules: J. C. Gluck, L. R. Gribble, and C. A. Arents.

Scholarships, Awards, and Student Financial Aids: J. C. Gluck, Betty Boyd, A. W. Goodspeed, J. E. Long, C. J. Sheehan, and R. M. White.

Social Affairs: J. C. Gluck, Betty Boyd, Wincie Ann Carruth, H. A. Gibbard, R. F. McWhorter, and Jesse Clovis; student members: Edward G. Atkins, Frances Blair Johnson, Nancy Carolyn Brown, and Jerry Rosenthal.

Student Fee Funds: J. C. Gluck and Betty Boyd; student members: Sam McConkey Maritsa Cosmides, and Lee Scott.

Student Publications: Quintus C. Wilson, Henry D. Collins, P. W. Gainer, F. E. Wright, and John Luchok; student members: Fred Casto, Sharon Steorts, and Charles N. Greene.

Sub-Committee on Loans: J. C. Gluck, J. H. Clarke, C. L. Lazzell, and E. O. Roberts.

Mountainlair Governing Board: J. C. Gluck, Betty Boyd, O. J. Burger, R. F. McWhorter, J. S. Scherlacher, and Dana Wells; student members: Jane Heaberlin Hall, John R. Lukens, James D. Patton, Jerry Sturm, and Peggy Richmond.

STUDENT ETHICS IN ACADEMIC WORK: F. P. Summers, C. W. Blissitt, W. D. Lorensen, L. Z. Seltzer, R. M. White, and C. P. Yost.

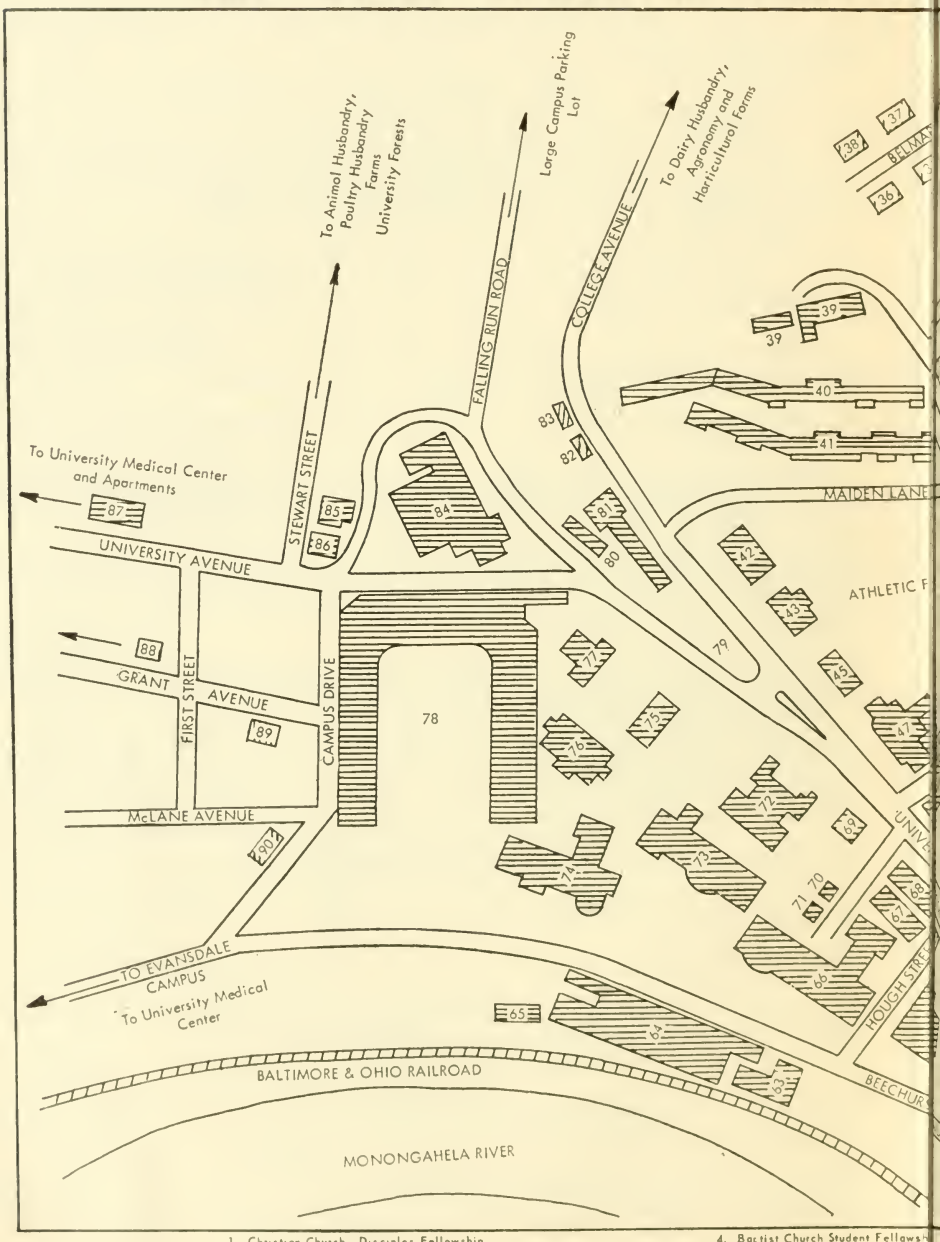
TEACHER EVALUATION: R. J. Johnson, R. L. Decker, R. S. Dunbar, Jr., W. K. Katz, and G. G. Pohlman.

TEACHER TRAINING: J. D. Clarkson, W. M. Bagby, E. R. Boggs, J. P. Brawner, C. N. Cochran, J. F. Clovis, W. F. Manning, D. F. Miller, Ruth D. Noer, G. E. Schafer, and John Semon.

TENURE AND RETIREMENT: F. E. Wright, II; C. R. Bishop, J. D. Graybeal, G. E. Toben, and M. L. Vest.

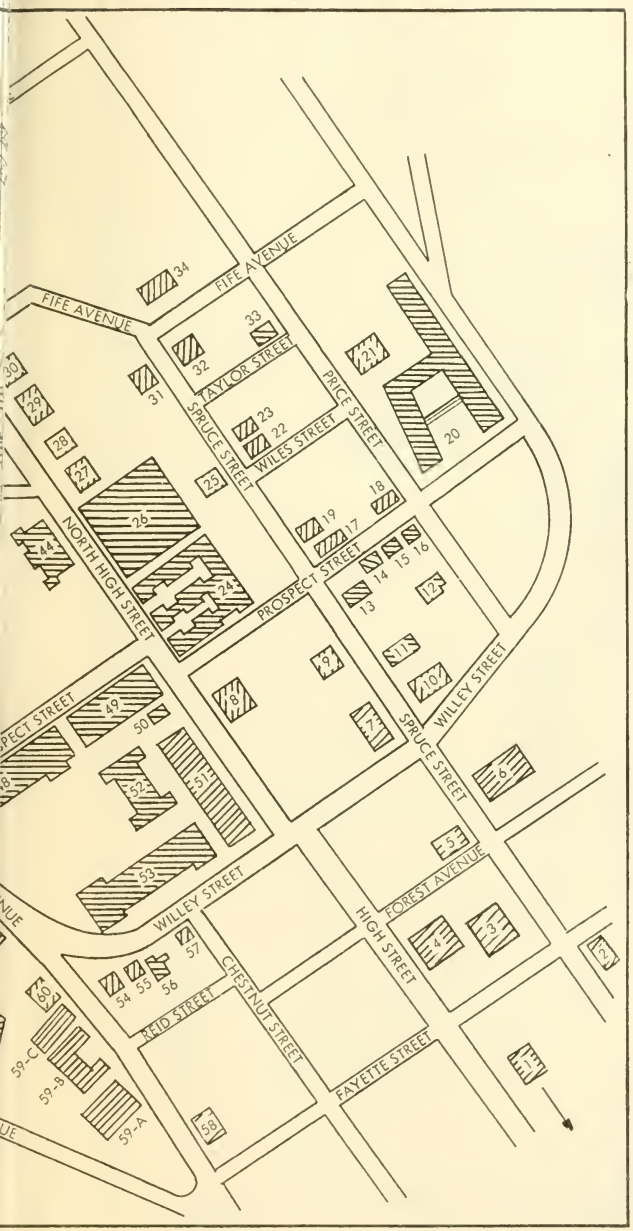
UNIVERSITY RESEARCH GRANTS: W. A. Koehler, ex officio; J. L. Hall, Frances Krauskopf, I. D. Porterfield, J. N. Shafer, J. R. Williams, and D. T. Worrell.

THE WEST VIRGINIA UNIVERS



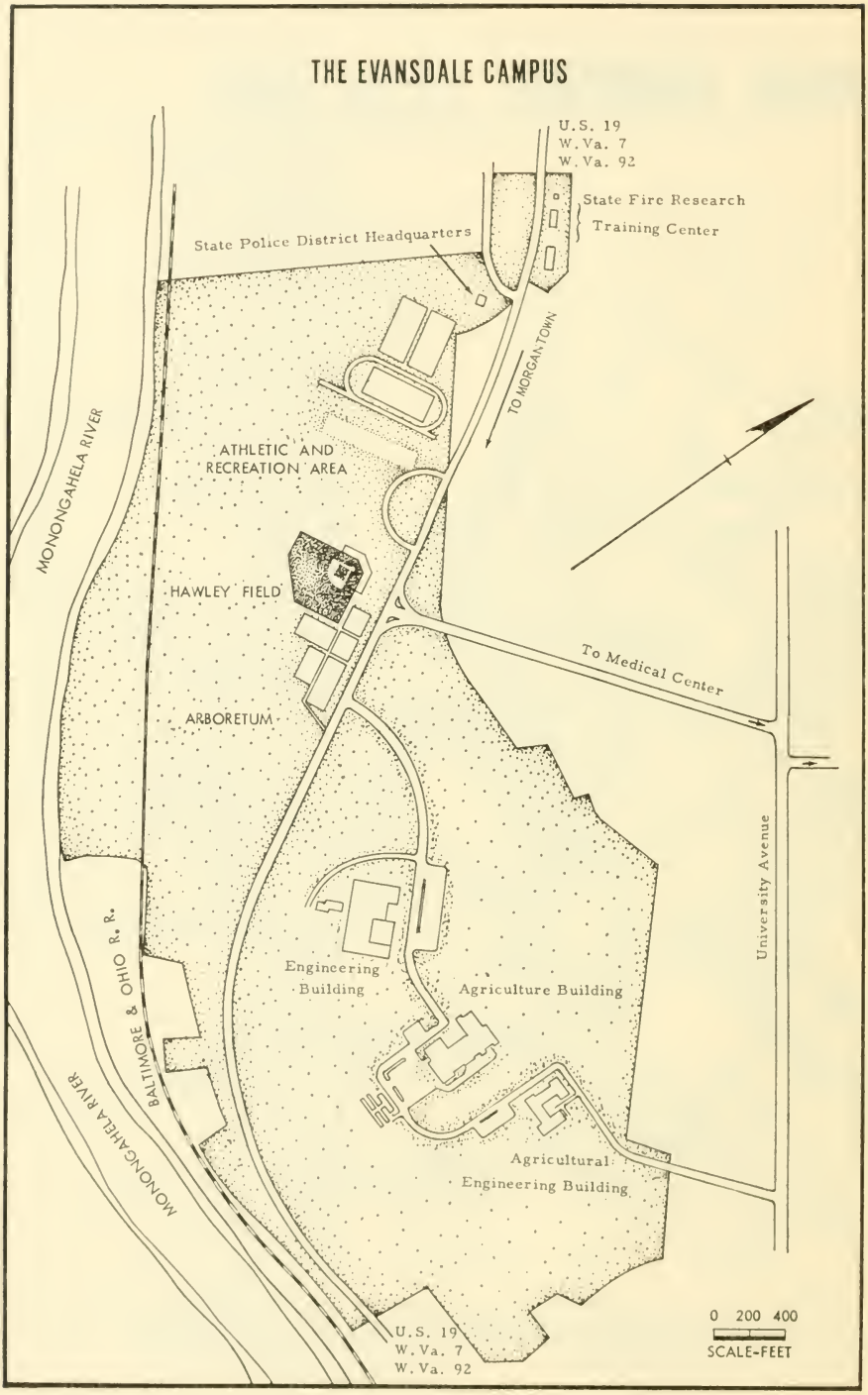
1. Christian Church – Disciples Fellowship
2. Spruce Street Methodist Church
3. Gamma Phi Beta Sorority
4. Baptist Church Student Fellows
5. Greek Orthodox Church – Greek O
6. Presbyterian Church – Westminis

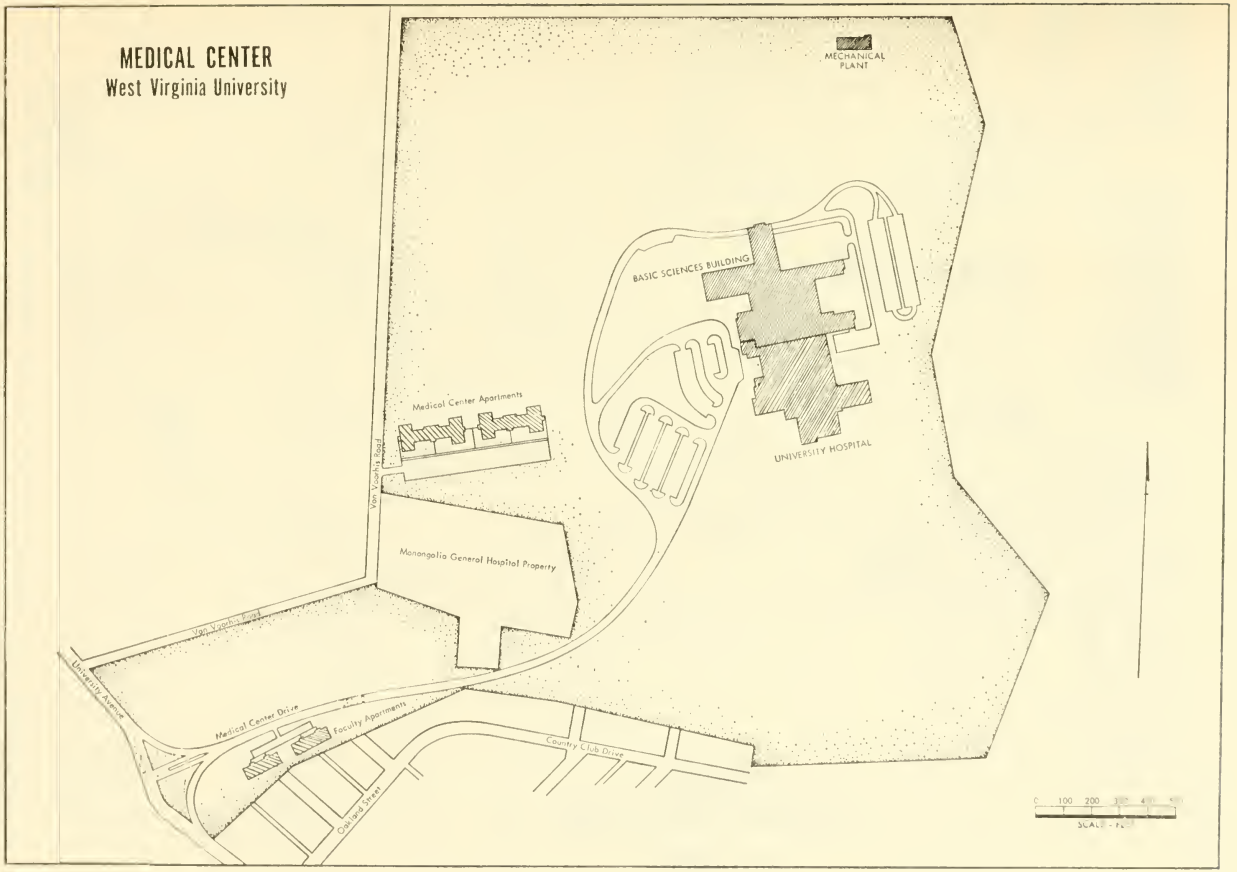
TY MAIN CAMPUS



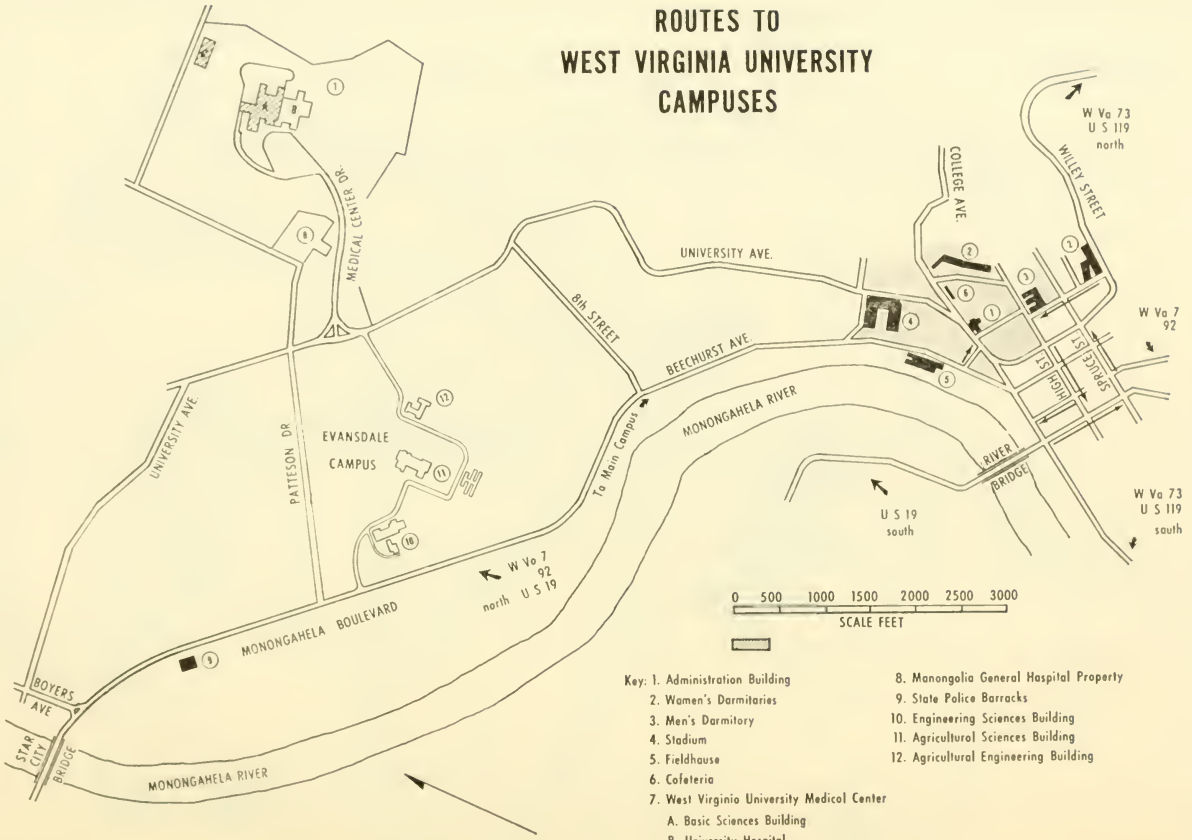
7. Episcapal Church – Canterbury Assaciatian
8. Chi Omega Sarority
9. Phi Kappa Sigma Fraternity

10. Alpha Phi Sorority
11. Spruce Street Annex
12. Nursery Schaal
13. Laurel Cattage
14. 284 Praspect
15. Textiles Labaratary
16. Hame Management Apartments
17. Kappa Kappa Gamma Sorarity
18. Alpha Delta Pi Sorarity
19. Alpha Xi Delta Sorarity
20. Arnald Hall
21. Delta Gamma Sarority
22. Delta Delta Delta Sarority
23. Alpha Phi Delta Fraternity
24. Men's Hall
25. Theta Chi Fraternity
26. New Men's Hall
27. Delta Tau Delta Fraternity
28. Kappa Alpha Fraternity
29. Phi Sigma Kappa Fraternity
30. Sigma Chi Fraternity
31. Phi Sigma Delta Fraternity
32. Tau Kappa Epsilan Fraternity
33. Old Agricultural Ecanamics Building No. 2
34. Phi Kappa Psi Fraternity
35. Sigma Nu Fraternity
36. Kappa Sigma Fraternity
37. Beta Theta Pi Fraternity
38. Phi Delta Theta Fraternity
39. Harticulture Greenhauses
40. Terrace Hall
41. Waman's Hall
42. Cafeteria
43. Health Center
44. Armary
45. Reynalds Hall
46. Speech Annex
47. Administratian Building
48. Chemistry Building
49. Engineering Building Na. 1
50. Classcack Annex
51. Methadist Church – Wesley Faundatian
52. Library
53. Mineral Industries Building
54. Kappa Delta Sorarity
55. Sigma Phi Epsilan Fraternity
56. Hame Management Hause
57. Alpha Sigma Phi Fraternity
58. Jewish Yauth Center – Hillel Faundatian
59-A St. Theresa Cathalic Church
59-B Newman Club (Cathalic youth graup)
59-C St. Jahn's Chapel
60. Pi Beta Phi Sarority
61. Music Building
62. Lutheran Church – Lutheran Student Assaciatian
63. Temparary Engineering Building Na. 2
64. Field Hause
65. Heating Plant
66. Physics Building
67. Baakstare
68. Law Building
69. President's Hame
70. Counseling Center
71. Placement Office
72. Elizabeth Maare Hall
73. Armstrang Hall
74. Braaks Hall
75. Martin Hall
76. Woodburn Hall
77. Science Hall
78. Mauntaineer Field
79. Prapased site, U.S.S. W.Va. Mast
80. Oglebay Hall Annex
81. Oglebay Hall
82. Residence Hausing Office
83. 721 College Avenue
84. Mauntainlair
85. Plant Pathalagy Greenhause
86. Farestry Building
87. Evangelical United Brethren Church – Student Yauth Fellawship
88. Alpha Gamma Rha Fraternity
89. Lambda Chi Alpha Fraternity
90. Pi Kappa Alpha Fraternity


THE EVANSDALE CAMPUS
U.S. 19
W.Va. 7
W.Va. 92
State Fire Research
Training Center
State Police District Headquarters
TO MORGANTOWN
MONONGAHELA RIVER
ATHLETIC AND
RECREATION AREA
HAWLEY FIELD
To Medical Center
ARBORETUM
University Avenue
Engineering
Building
Agriculture Building
BALTIMORE & OHIO R. R.
MONONGAHELA RIVER
Agricultural
Engineering Building
U.S. 19
W.Va. 7
W.Va. 92
0 200 400
SCALE-FEET


MEDICAL CENTER
West Virginia University
MECHANICAL PLANT
BASIC SCIENCES BUILDING
UNIVERSITY HOSPITAL
Medical Center Apartments
Van Voorhis Road
Monongalia General Hospital Property
University Avenue
Medical Center Drive
Faculty Apartments
Country Club Drive
Oakland Street
100
200

ROUTES TO WEST VIRGINIA UNIVERSITY CAMPUSES



Key: 1. Administration Building
2. Women's Darmitaries
3. Men's Darmitory
4. Stadium
5. Fieldhouse
6. Cafeteria
7. West Virginia University Medical Center
A. Basic Sciences Building
B. University Hospital
C. Mechanical Plant
8. Manongolia General Hospital Property
9. State Police Barracks
10. Engineering Sciences Building
11. Agricultural Sciences Building
12. Agricultural Engineering Building

Part I

HISTORY, DESCRIPTION, AND ORGANIZATION

History

West Virginia University was founded as a result of the Congressional Land-Grant (Morrill) Act of July 2, 1862, originally proposed in Congress for the benefit of agriculture and the mechanic arts. The State Legislature accepted conditions of the Act on October 3, 1862. Because of the State's questionable wartime status, the Legislature later specifically requested that the Act's benefits be extended to West Virginia. This was done by Congress on April 19, 1864, with the issuance of 150,000 acres in land scrip for public tracts, principally in Iowa and Minnesota.

The trustees of Monongalia Academy, on January 9, 1866, offered its property to the State, including the site and other property of nearby Woodburn Female Seminary, appraised at $51,000, on condition that the proposed college "be located permanently at or near Morgantown." The Legislature accepted the offer February 7, 1867, and established the "Agricultural College of West Virginia."

Government and control of the "Agricultural College" were vested in a Board of Visitors composed of one member from each of the State's eleven senatorial districts. In response to requests from President Alexander Martin, the Legislature, by an act of December 4, 1868, changed the name of the "Agricultural College" to "West Virginia University." At the same time the name of the controlling body was changed from "Board of Visitors" to "Board of Regents." Primarily to serve political purposes, the number of regents was changed from time to time until 1919, when government and control were vested in a State Board of Education of five members, including the State superintendent of free schools as the ex officio chairman. This plan was unsatisfactory, and an act of April 14, 1927, vested control of the University's academic matters in a Board of Governors of seven members. In 1947, the Board was increased to nine members, and made responsible for both academic and financial affairs of the University.

Right up to the end of the century, supporters of the institution were divided on whether to work for a "State-supported University," or a "first-class State-supported college." Until the early 1890's, the "College Plan" dominated, with "departments" and "schools" functioning autonomously, and with professors generally occupying "chairs" and operating provincially.

But the Hatch Act (1887) and the Second Morrill Act (1890) stimulated more progressive thinking among leaders in higher education. Many of them who were familiar with European systems (including the University's President James L. Goodnight) helped bring the "University Plan" into the ascendancy. In 1895 President Goodnight set out to convert the "University" into just that.

ORIGIN OF THE SCHOOLS AND COLLEGES

The eight Academy Schools, five Technical and Professional Schools, and four Special Courses were organized into four colleges, each with a dean: Arts and Sciences, Powell B. Reynolds; Engineering and Mechanic Arts, William S. Aldrich; Agriculture, John A. Meyers; and Law, Judge Okey Johnson. The School of Music was established in 1897, a "Summer Quarter" or "Continuous Session" in 1898, and a College of Medicine in 1900.

Both the College of Medicine and the Summer Quarter were discontinued in 1901. Beginning in 1897 the College of Arts and Sciences and the College of Engineering and Mechanic Arts functioned without deans and through more or less autonomous departments and schools to 1911 when the deanships were revived. In 1902 a semblance of the "Summer Quarter" was revived in the "Summer School," which in 1932 became

the "Summer Session." Alternating between a department and a school organization since 1867, Military Science and Tactics became a division in 1911. The arrangement made in 1903 with the College of Physicians and Surgeons, Baltimore, for maintaining a University College of Medicine proved unsatisfactory. It was discontinued in 1910, and the "Medical Sciences" were offered in a department of the College of Arts and Sciences to 1912 when the School of Medicine was established. In 1914 a Department of Pharmacy was established in the School of Medicine. In the same year the Department of Home Economics, previously a unit in the College of Arts and Sciences, was transferred to the College of Agriculture. The Division of Agricultural Extension was organized in 1912 and the Division of Mining and Industrial Extension in 1914.

The building program inaugurated in 1917 brought additional expansions and curricular offerings. Among the former were the Engineering Experiment Station, 1921, and the School of Mines, 1926, which in 1930 became an independent unit. In 1927 the courses in education were transferred from the College of Arts and Sciences to the newly created College of Education, and in 1928 the Division of Physical Education was established. Offerings were being improved meanwhile through additional and better-qualified personnel. In January, 1930, the Board of Governors established a Graduate School authorized to offer graduate degrees in certain indicated fields.

The Depression (1929-35) slowed expansion somewhat, but progress was resumed in 1936 when the Department of Pharmacy was discontinued as a unit of the School of Medicine and converted to the College of Pharmacy. The next year the Division of Physical Education and the Department of Athletics were combined into the School of Physical Education and Athletics. At the same time (1937), the course in Forestry begun in 1935 as a two-year curriculum in the College of Agriculture, was expanded to a four-year course, and the name of the sponsoring unit was changed to the College of Agriculture, Forestry, and Home Economics. In 1939 the Department of Journalism was discontinued as a unit in the College of Arts and Sciences and became the School of Journalism. The same year a Department of Art was established in the College of Arts and Sciences. In 1940 the College was further enlarged by the inclusion of a Department of Social Administration, authorized to offer a graduate curriculum leading to the professional Certificate of Social Work. In 1941 the name was changed to the Department of Social Work and in 1944 the Department was authorized to establish an undergraduate curriculum in social work leading to the Bachelor of Science Degree.

In 1950 the Board of Governors authorized the degree of Master of Social Work and approved the establishment of a two-year curriculum leading to that degree. In 1944 a four-year course leading to the B.S. (Medical Technology) Degree was approved to be given jointly by the College of Arts and Sciences and the School of Medicine. In 1948 the Board of Governors approved an order authorizing the College of Arts and Sciences to offer a general course as an integral part of its curriculum and an optional lower-division program of general studies. In 1951, the Department of Economics and Business Administration was discontinued as a unit in the College of Arts and Sciences and converted into the College of Commerce. In 1953 the School of Dentistry was established. In 1958, the College of Pharmacy was reconverted into the School of Pharmacy, marking the integration of the School into the University's expanding medical sciences program. The University's Kanawha Valley Graduate Center of Science and Engineering was established at Institute, with the first classes beginning in September of 1958. In 1961 it was changed to Kanawha Valley Graduate Center of West Virginia University. In 1960 the School of Physical Education and Athletics was changed to the School of Physical and Health Education, Recreation, and Safety. In 1960 the School of Nursing was established.

PRESIDENTS OF THE UNIVERSITY

The University has had fifteen regular presidents, eleven acting presidents, and one chairman of the faculty. Together with their periods of service, they were Alexander Martin, April 3, 1867-August 12, 1875; Vice-president John Work Scott (acting), September 6, 1875-March 27, 1877; John Rhey Thompson, March 28, 1877-March 12, 1881; Vice-president Daniel Boardman Purinton (acting) March 13, 1881-

1882; William Lyne Wilson, 1882-1883; Robert Carter Berkeley (Chairman of the faculty), 1883-1885; Eli Marsh Turner, 1885-July 21, 1893; Vice-President Powell Benton Reynolds (acting), July 24, 1893-1895; James L. Goodnight, 1895-August 6, 1897; (from August 6 to August 19, 1897, Vice-president Robert Allen Armstrong was nominally acting president); Jerome Hall Raymond, August 10, 1897-1901; Powell Benton Reynolds (acting), March 21, 1901-July 31, 1901; Daniel Boardman Purinton, August 1, 1901-July 31, 1911; Alexander R. Whitehill (acting), August 1, 1911-September 30, 1911; Thomas Edward Hodges, October, 1911-August 31, 1914; Frank Butler Trotter (acting), July 9, 1914-1916; 1916-1928; John Roscoe Turner, 1928-December 31, 1934; Robert Allen Armstrong (acting), January 1, 1935-September 30, 1935; Chauncey Samuel Boucher, October 1, 1935-August 31, 1938; Charles Elmer Lawall (acting), September 1, 1938-1939; 1939-August 31, 1945; Charles Thompson Neff, Jr., (acting), September 1, 1945-1946; Irvin Stewart 1946-August 24, 1958; Clyde Lemuel Colson (acting), August 26, 1958-January 31, 1959; Elvis Jacob Stahr, Jr., February 1, 1959-January 25, 1961; Clyde Lemuel Colson (acting), January 26, 1961-December 31, 1961; Paul Ausborn Miller, January 1, 1962.

Description

THE PHYSICAL PLANT

West Virginia University's Main Campus comprises 74.35 acres near the center of Morgantown. Its Evansdale campus, about one and one-half miles northwest of the main campus, consists of approximately 260 acres and was acquired in 1948. This campus is the site of the new buildings of the Colleges of Agriculture and Engineering, occupied in the Spring of 1961. In 1951, the Monongalia County Court deeded to the University approximately 85 acres of land adjoining 55 acres already owned by the University. This 140-acre tract, about one and one-half miles north of the Main Campus, is the site of the new University Medical Center. In 1960 the University acquired 58.05 additional acres in the area across a road from the Medical Center Mechanical Plant. This acreage is adjacent to 3 acres bequeathed to the University. The first building of the Center, the Mechanical Plant, was completed in 1954. The Basic Sciences Building was opened for classes in September, 1957. Construction was completed on the University Hospital in December, 1959.

Much of the Main Campus is on high ground overlooking the Monongahela River and the surrounding countryside. The physical plant includes 49 state-owned buildings or structures on campus, five demonstration and experimental farms near Morgantown, four additional experimental farms and two Cooperative Extension centers located at suitable points throughout the State, a summer surveying camp for civil and mining engineering students, and a summer camp for forestry and biological science students. A new women's dormitory, Arnold Hall, was put into use in September, 1957, and an addition to Men's Hall, accommodating 250 students in September, 1959.

In the summer of 1961 completion of a large housing project provided 188 apartments for faculty, staff, and students at the Medical Center, as well as 276 dormitory spaces for women students and 86 apartments for faculty, staff, and students on the Main Campus.

CAMPUS STRUCTURES

Structures on the three campuses, with the dates of their completion or acquisition, are: Martin Hall, 1870; Woodburn Hall, 1876; Science Hall, 1893; Armory, 1902; Administration Building (which was the old Library), 1902; President's Home, 1905; Heating Plant, 1906; Placement Office, 1914; Horticultural Greenhouse, 1915; Oglebay Hall, 1918; Women's Hall (the wings were added in 1935), 1919; Plant Pathology Greenhouse, 1920; Law Building, 1923; Speech Annex (was the University cafeteria until 1947, now houses scene shops of the Department of Speech and shops of the Department of Buildings and Grounds), 1924; Mountaineer Field, 1925; Hall of

Chemistry, 1925; Elizabeth Moore Hall, 1928; Field House, 1929; University Library, 1931; Deahl Hall, to 1948 the "University Rural High School," 1933; Men's Hall, 1935; Oglebay Hall Annexes, 1933 and 1937; Reynolds Hall (formerly "Commencement Hall," completed in 1893), 1940; Mineral Industries Building, 1942; University Health Center, 1942; Terrace Hall, 1942; Home Management House, 1942; Forestry Building, 1946; Stoker Laboratory, 1946; Cafeteria, 1947; Mountainlair, 1948; Armstrong Hall, 1950; Brooks Hall, 1951; Physics Building, 1952; Music Building, 1954; Arnold Hall, 1957; Medical Center Basic Sciences Building, 1957; Engineering Buildings Nos. 1 and 2, 1957; Men's Hall Addition, 1959; University Hospital, 1959; Honors House, 1960; Laurel Cottage, 1960; 719 College Avenue, 1960; Faculty Apartments A and B, Medical Center, 1961; Medical Center Apartments J and K, 1961; Arnold Hall Addition and Arnold Hall Apartments, 1961; Terrace Hall Addition, 1961; Engineering Sciences and Aero-Space, 1961; Agricultural Sciences, 1961; Agricultural Engineering, 1961; Greenhouses on Evansdale Campus, 1961.

LOCATION

The main campuses of the University are in Morgantown, Monongalia County, 80 miles southeast of Wheeling and 200 miles north of Charleston. The community is served by the Baltimore and Ohio Railroad (limousine service between Morgantown and Grafton), Lake Central Airlines, thirty truck systems and five bus lines, and W. Va. Routes 7, 73 and 92, and U. S. Routes 19 and 119. Morgantown is located on the Monongahela River, 72 miles south of Pittsburgh, Pa. Half of the population of the United States is within 500 miles of Morgantown.

ACCREDITATION

West Virginia University is a member of the North Central Association of Colleges and Secondary Schools. It is accredited by the North Central Association and various accrediting agencies.

FARMS

The farms, with dates of acquisition, are: Dairy Husbandry Farm, 175 acres (1899) and 29.5 acres (1941); Horticulture Farm, 62.5 acres (1916); Animal Husbandry Farm, 321 acres (1916) and 262.5 acres (1941), including a portion for Poultry Husbandry; Agronomy Farm, 178 acres (1961), transferred to the University by the City of Morgantown in exchange for the old Agronomy Farm and other considerations which are to be used for the extension of the Morgantown Airport; and Poultry Husbandry Farm, 20 acres (1916) now used by Dairy Husbandry, all near Morgantown; University Experiment Farm at Kearneysville, Jefferson County, 158 acres (1930); Reymann Memorial Farms at Wardensville, Hardy County, 930 acres (1917) and 57 acres (1953); Reedsville Experiment Farm, Preston County, 457 acres (1944); Ohio Valley branch, Mason County, 150 acres (1948); Tygart Valley Farm (Forestry), Randolph County, 495 acres (1949); Camp Russell Love Morris (Engineering), Preston County, 53.5 acres (1950).

The Cooperative Extension centers, with dates of establishment, are the State 4-H Camp at Jackson's Mill, Lewis County (1921), and the Recreation Center at Oglebay Park, Ohio County (1926).

THE ARBORETUM

Approximately 80 acres of mostly wooded land along the west side of Monongahela Boulevard were set aside in 1948 for growing trees, wildflowers, and other plants, and for their display for students of botany, forestry, horticulture, etc., as well as for the general public. Footpaths have been constructed to provide access to various parts of the Arboretum.

Organization

Operating Funds

Funds for operating the University's various divisions are derived from the following sources: (1) interest on the land-grant endowment of $129,600; (2) annual appropriations by the Legislature; (3) Federal Morrill-Nelson and Bankhead-Jones funds; (4) student activities fees; (5) Hatch Act, Amended; (6) Agricultural Extension Consolidated; (7) tuition of high school students paid by Monongalia County Board of Education; (8) income derived from sale of farm and dairy products, as well as income from athletics, dormitories, dining halls, book store, student activities, hospital clinics, etc.; (9) grants by Federal agencies for special research and extension projects; (10) contributions by private benefactors for the support of scholarships, loan funds, and prizes, and (11) revenues from the State soft-drink tax dedicated to the establishment of a medical center for teaching and research in medicine, dentistry, nursing, and medical technology.

GOVERNMENT

Direction of educational, administrative, financial, and business affairs of the University is vested in the Board of Governors. The board is bipartisan and consists of nine members who are appointed by the Governor with staggered terms of service.

The University year is divided into two semesters of approximately eighteen weeks each and a Summer Session of two terms of five weeks each.

Acting in an advisory capacity to the President and assisting him in carrying out established University policies is a *Council of Administration,* composed of the President, the Vice-President, the Registrar, the Comptroller, and the deans of all colleges and schools, as well as other administrative officers who may be requested to take part in the deliberations of the Council.

The *University Senate,* a legislative body with jurisdiction over all academic matters that concern the entire University and all matters that concern more than one college or division, is composed of the President, the Vice-President, the Registrar, all professors, associate professors, and assistant professors in all colleges, schools, and divisions, and all chairmen of departments.

The *Graduate Faculty,* composed of all members who teach courses on the graduate level, sets the specific requirements and standards of quality for admission to candidacy for graduate degrees and for the awarding of graduate degrees.

The *Committee on Student Affairs* acts as an integral part of the whole organization of the University. Its program is bound up with that of the University as a whole and is designed to serve the larger academic and social objectives of modern education. For a list of members, see page 7.

COLLEGES AND SCHOOLS

The components of the University, together with dates of establishment of the various colleges and schools, etc., follow:

Colleges: College of Arts and Sciences, 1895; College of Law, 1895; College of Engineering and Mechanic Arts, 1895 (changed to College of Engineering in 1960); College of Agriculture, 1895; College of Education, 1927; College of Pharmacy (changed to the School of Pharmacy in 1958), 1936; and the College of Commerce, 1952.

Schools: School of Music, 1897; the Summer Quarter, 1898-1900, Summer School, 1902-1931, and Summer Session, 1932; School of Medicine, 1912; School of Mines, 1926; Graduate School, 1930; School of Physical Education and Athletics, 1937; School of Physical and Health Education, Recreation, and Safety, 1960; School of Journalism, 1939; School of Dentistry, 1953; School of Pharmacy (formerly the College of Pharmacy), 1958, and School of Nursing, 1960.

Divisions: Division of Military Science and Tactics, 1911; Division of Military and Air Science and Tactics, 1949; Division of Military Science and Tactics and Air

Science, 1955; Division of Military Science and Air Science, 1960; Division of Home Economics, 1937; and the Division of Forestry, 1937.

Experiment Stations and Research Bureaus: Agricultural Experiment Station, 1888; Engineering Experiment Station, 1921; Government Research Bureau, 1931-1935; Bureau for Government Research, 1949; and the Bureau of Business Research, 1949.

Extension Service: Agricultural Extension (Cooperative Extension 1961), 1912; Mining and Industrial Extension, 1914; Education Extension, 1915; Liberal Arts Extension, 1916; University Extension, 1930; and the Institute of Industrial Relations, 1956.

The College of Agriculture, Forestry, and Home Economics; the College of Arts and Sciences, the College of Engineering; the School of Music, the School of Mines, the School of Nursing, and the School of Physical and Health Education, Recreation, and Safety are all degree-granting units admitting freshmen. The College of Education, the College of Commerce, the School of Dentistry, the School of Journalism, the School of Medicine, and the School of Pharmacy are professional colleges and schools requiring from two to three years of academic training as a foundation for professional work. All graduate instruction is administered by the Graduate School through the Graduate Faculty.

UNIVERSITY EXTENSION

The work of this division is under the supervision of the Director of University Extension. The work given in extension courses corresponds in every particular to that given in the same courses on campus. Students taking extension courses for credit must satisfy all requirements for admission to the University and, before registering, must file with the Registrar of the University complete official transcripts of record.

The *maximum undergraduate credit* that may be counted toward any degree for extension work conducted by the University is 48 semester hours. The *maximum undergraduate credit* that may be counted toward a degree for extension work taken in other institutions is 30 semester hours. No more than 15 hours of work taken in *graduate extension courses* may be counted toward any degree, and of these only 8 semester hours may be in one field. Education majors are limited to 12 semester hours that may be counted toward the completion of the Master's Degree. No more than 8 of these hours can be taken in extension prior to earning 6 hours in Education *in residence* in the University. For other regulations on graduate extension for Education majors see the *Announcements* of the College of Education.

No University extension courses may be offered without the approval of the Director of University Extension. Library and laboratory facilities for each course must be approved by the Director and, in case of courses for graduate credit, by the Dean of the Graduate School. Reference books for the use of extension students may be borrowed from the University Library upon the order of the Director of University Extension, subject to the approval of the Library committee. Postal charges must be paid by the individual or groups for whom the books are borrowed.

A fee of $12 per semester hour is charged for each extension course offered.

For further information write to the Director of University Extension.

Labor Education Service

The purpose of the Labor Education Service of University Extension is to provide education to individuals and groups who request it.

While most of the work in Labor Education is with organized labor groups, the Service does offer help to other adult groups in such areas as consumer education, health, welfare and social security benefits, and economics. Persons desiring further information should write University Extension for more particulars.

Evening Education

The University offers a program of evening classes for the benefit of those who wish to continue their education beyond the high-school level and who are unable to attend the usual day classes.

All courses are taught by resident faculty members and carry full college residence credit. Many of these courses may be counted toward advanced degrees.

Guided Reading Courses (Correspondence)

The Extension Division offers twelve reading courses through correspondence. While these courses are offered in cooperation with the West Virginia Federation of Women's Clubs, any adult may enroll for any of these courses by applying to the Director of University Extension. The fee is $1 per course. The reader sends in short reports on the books he reads in each course. When the course has been satisfactorily completed, a progress card from the West Virginia University Extension Division is awarded. These courses carry no University credit but are designed to provide adults with some of the best reading materials in the areas covered through this program. The courses include: (1) World Affairs; (2) Modern America; (3) Psychology for Everyday Living; (4) Happy Family Relationships; (5) Novel and Biography; (6) Ideas in Conflict; (7) The Home Beautiful; (8) Design for Outdoor Living; (9) Leadership; (10) So You've Been Elected; (11) Science and the Modern Man, and (12) Something About Art.

THE SUMMER SESSION

The Summer Session is held from June through August. The session is made up of two terms of five weeks each.

University High School will be in session the first nine weeks for secondary-school student teaching, practice supervision, and observation. The University Laboratory Elementary School will be in session during the first five weeks for elementary school observation and practice supervision.

Requirements for admission and character of the work offered are the same for the Summer Session as for the regular academic year.

Credit may be obtained towards the Bachelor's, Master's, and toward the Doctorate. Offerings are varied from summer to summer so that students may complete work for the Master's Degree by attending summer sessions only.

For complete description of courses, see the *Summer Session Bulletin.*

INTERCOLLEGIATE ATHLETICS

The basic objectives of Intercollegiate Athletics at West Virginia University are:

1. To provide an opportunity for students highly skilled in athletic sports to develop their ability as a preparation for coaching positions, as teachers of physical education, and for their own physical, social, and emotional improvement.

2. To develop an understanding and an appreciation of the place which intercollegiate sports occupy in American culture and to develop sound educational attitudes toward sports.

3. To educate the student body in the appreciation of sports and the best way to enjoy them from the point of view of good sportsmanship.

4. To serve as a focal point for the morale, spirit, and loyalty of the students by providing a common meeting ground and enthusiasm.

5. To provide a wholesome program of sports in which students, alumni, and friends of the University may share, to the end that the loyalty of these groups to the University and its work may be constantly renewed, strengthened, and united.

Additional objectives of the Intercollegiate Athletic program are:

1. To set desirable examples of good physical skill, team play, sportsmanship, health habits, and other characteristics that go with skilled sports, both individual and team.

2. To provide a living laboratory of democracy in action, where all players are treated without favor or prejudice, to learn to respect the rights of others, obey the rules, and judge others for what they can do.

3. To broaden the social experience of players and spectators through travel, visiting other schools, and making the acquaintance of other young people of similar age.

Activities of the Department of Intercollegiate Athletics are administered, under the President of the University, by the Director of Intercollegiate Athletics and by the Athletic Council. The council is composed of seven members: four faculty, two alumni, and one student. The Dean of the School of Physical and Health Education, Recreation, and Safety serves as a member, and the Director of Athletics is the executive officer.

Instruction and training are given each year in the seasonal sports such as football, cross-country, basketball, wrestling, baseball, swimming, gymnastics, track, tennis, rifle, golf, and soccer. Matters concerning athletic eligibility regulations are decided by the Athletic Council. Scholastic eligibility regulations are established by the faculty of the University.

The rules and policies of the Southern Conference govern participation in intercollegiate athletics. In addition, sophomores must have a 1.5 grade-point average, juniors a 1.7 average, and seniors a 1.9 average.

INTRAMURAL PROGRAM

A broad intramural sports program for men and women is provided by the School of Physical and Health Education, Recreation, and Safety. It aims to encourage all students to participate in organized sports and wholesome recreation. Competition is promoted between student groups and individuals. Such natural groupings as classes, fraternities, sororities, dormitories and other nonfraternity units form the basis for activity in competitive sports.

The following activities are conducted for men: soccer, badminton, cross-country, tennis, volleyball, handball, basketball, swimming, relays, golf, bowling, archery, basketball free throwing, softball, horseshoes, and outdoor track. Other activities may be organized when there is sufficient interest on the part of students and when facilities permit. Leagues are organized to accommodate fraternities, residence halls, and nonfraternity groups.

The following activities are conducted for women: volleyball, badminton, swimming, basketball, bowling, softball, table tennis, shuffleboard, archery, and tennis. Interclass tournaments for physical education majors are held in the following activities: volleyball, badminton, basketball, swimming, tennis, and softball. As the demand for more activities develops and when facilities become available, the program will be broadened.

ASSOCIATED INSTITUTIONS

The West Virginia Academy of Science was organized in 1924 to bring about closer affiliation among scientists of the State and to encourage the pursuit of scientific work in West Virginia. It is now a body of nearly five hundred persons who are interested in the service of science in the development of the State. Members are widely distributed throughout the State and adjoining states and are representative of colleges, high schools, and industries. A Collegiate Academy and a Junior Academy are sponsored by the Senior Academy. Annual meetings, held at the various institutions of higher learning, are divided into sections on biology, chemistry, geology and mining, mathematics and physics, education, psychology, and social sciences. The *Proceedings* of the annual meetings are published under the auspices of the University and the Academy.

The West Virginia Geological and Economic Survey, situated at West Virginia University, is governed by its own Commission and receives separate appropriations. The Geological Survey was founded by an Act of the Legislature in 1897 and has functioned consistently since that date. It is recognized as one of the leading State surveys.

One of its major purposes is to have members of the staff, specialists in their fields, investigate all natural resources, especially mineral resources of the State, and

make results of the investigations available to the public in the form of written reports and maps.

Accomplishments of the Survey include geologic and topographic mapping of the State, as well as preparation of numerous special reports on the State's mineral and other natural resources. A new topographic mapping program, using aerial photographs, is well under way.

Core drill examinations of river terrace deposits and mineral investigations of rock strata are now being made with new equipment recently acquired.

A Section of Archeology has been included in the Survey's new activities.

The professional staff is composed of eight geologists, a sedimentary petrographer, a spectroscopist, an engineer-cartographer, a cartographer-draftsman and an archeologist. There is close cooperation between the Geological Survey and the Department of Geology of the University. Three geologists from the U. S. Geological Survey are assigned here for cooperative studies on ground waters. The large collection of well cuttings and cores on file brings petroleum geologists here to study them.

Government of the Survey is vested in the Geological Survey Commission, composed of the Governor of West Virginia, the State Treasurer, the Commissioner of Agriculture, the President of the University, and the Director of the West Virginia University Agricultural Experiment Station.

The Materials Laboratory of the State Road Commission is housed in the Engineering Sciences Building. Its work includes testing of all materials used by the Commission and research problems of road construction and maintenance in West Virginia. The State Road Commission and the College of Engineering cooperate on research and development programs.

Services

MOUNTAINLAIR

Mountainlair, the student center, was opened May 14, 1948 to provide members of the University with a general recreation and service center.

Situated at the northeast end of Mountaineer Field, the student center contains a large combination snack bar-cafeteria, four bowling alleys, a lounge with television and radio, meeting rooms, office space, and a huge ballroom which doubles as a game room. A smaller upstairs ballroom is used for small dances, movies, meetings, etc.

Service at the Information Desk is the keyword. As the campus information center, this booth renders many worthwhile services to accommodate the University community.

The Mountainlair Swimming Pool was opened in August, 1951. The pool is of regulation intercollegiate size; and in addition to providing recreational swimming opportunities for University personnel, it serves as the home of the University's swimming team.

The Mountainlair staff devotes its full time to creating and maintaining a pleasing atmosphere for students' leisure-time activities and to setting up an adequate program designed to fit individual needs of students. The activities are planned by the students with the coordination of the Mountainlair Program Director.

The building is open from 7:30 A.M. to 10:30 P.M. Monday through Thursday, 7:30 A.M. to 11:30 P.M. Friday and Saturday, and 2:00 P.M. to 10:30 P.M. Sunday.

UNIVERSITY PERSONNEL DEPARTMENT

The University Personnel Department was created to provide a variety of personnel programs designed to assist the teaching, research, administrative, service, and maintenance departments of the University to perform their vital functions. These programs include applicant recruiting, testing and employment of full-time, part-time and student employees; wage and salary administration for all non-academic employees; benefit program administration; employee training, and special employee services.

The central Personnel Department is located to the rear of the Administration Building on the Main Campus. It may be reached by using the walkway which runs between Reynolds Hall and the Administration Building leading to the shop area of the Physical Plant Department. A branch office of the central Personnel Office is located in the University Hospital on the Medical Center Campus.

The employment office of the central Personnel Office and the Medical Center branch office are both concerned with University-wide employment opportunities existing on all campuses. Therefore, one application submitted at either convenient office is all that is necessary to be considered for any opportunity existing on any campus of the University.

The benefit program is administered at the central Personnel Office on the Main Campus. Special services include benefit orientation for all new employees, the processing of all claims for benefits resulting from membership in the benefit plans, and special individual counseling upon the employee's request concerning the University benefit programs and available supplemental programs leading to estate and protection planning. Enrollment in the University benefit programs are conducted at both office locations.

Student Employment

Students seeking full-time or part-time employment on or off the campus will receive service and assistance from the Personnel Department. All employment opportunities will be posted each week on the bulletin boards located on all three campuses. Any student interested in a position which has been listed should go to either personnel office during the regular hours and apply for the position. If he is qualified he will be given a referral introduction to the prospective employer, whom he will contact directly.

EMPLOYMENT AND PLACEMENT

The Senior and Alumni Placement Service

The University Placement Service is maintained to provide assistance in vocational and job selection. This centralized service of the University does not end with placement of the student on his first job, but may be referred to at any time in the future.

The Placement Office is on Hunt Street across from the Physics Building. In addition to registration procedures, which include counseling in the techniques of job application, this service analyzes the changing market for graduates, assists alumni seeking promotion or change of position, cooperates with all individuals and agencies interested in placement, and is engaged in continuous research in the interest of improving these services. A meeting place is provided for students seeking jobs, visiting company, governmental, and educational representatives, and faculty members whose comments are sought by employers.

A vocational library is maintained to assist any student having difficulty in deciding upon a career as well as to enable those graduating to review the kinds of opportunities available in their fields.

The Placement Service cannot furnish credentials to commercial agencies.

HEALTH SERVICE

The University Health Service provides medical care to students of the University and supervises general campus health conditions. The staff includes four full-time and two part-time physicians, seven nurses, two laboratory technicians, and clerical personnel. The University Pharmacy, housed in the Health Center, is managed by the School of Pharmacy. The departments of Pathology and Microbiology cooperate in the laboratory examination of diagnostic materials.

The Health Service occupies the University Health Center, constructed in 1942. This three-story building is centrally located, fronting on College Avenue adjacent to Reynolds Hall. It is built of brick and concrete and is fireproof throughout. On the

first floor are the treatment rooms, offices, and pharmacy. The second floor is occupied by laboratory and X-ray departments, and offices for physicians. The third floor contains a well-equipped infirmary.

The Health Service is in operation from 8:00 A.M. to 5:00 P.M. daily except Saturday and Sundays. Saturday hours are 8:00 A.M. to noon. Physicians are in attendance from 9:00 A.M. to 12:00 M. and 2:00 P.M. to 4:00 P.M. A nurse is present at all times in the Infirmary, and a University physician can always be reached by calling the Health Service, Extension U294 on the University exchange.

Each regularly enrolled University student pays a fee which provides for medical consultation and advice from University physicians. Moderate additional charges are made for room calls, X-rays, laboratory tests, minor operations, treatment of fractures, and drugs furnished by the Health Service or Pharmacy.

On his first enrollment in the University a student receives a complete physical examination which includes a blood test and urinalysis. The Health Service also gives special physical examinations to students in competitive athletics, to University food handlers, to employees of the Physical Plant Department, and to other groups as occasion may arise.

The Infirmary

Students who need bed care for medical illness are hospitalized in the University Infirmary. The Infirmary is open only to full-time students. It is the policy of the Health Service to have all students requiring such care in the Infirmary. Students hospitalized in the Infirmary are under the care of Health Service physicians, although other qualified physicians may be seen in consultation when necessary. Patients will be admitted and discharged on the order of Health Service physicians.

Upon admission to the Infirmary the student receives two days of hospitalization without charge except for laboratory, X-ray, special medications, and private duty nurse fees. No additional charge is made for general nursing care, dressings, routine medications as commonly supplied by the Health Service, and food as ordered by the physician in charge. Laboratory examinations, X-rays, penicillin, and similar medication will be charged at the usual Health Service rate to students. Special nurses, when necessary, are at the expense of the student.

A student may not receive more than thirty days hospitalization for any one illness. Patients are to leave when discharged by the University physicians. When it becomes evident that a student's illness will be so prolonged as to prevent his completing work of the current semester, he may be discharged from the Infirmary when the attending physician or the Director of the Health Service considers that he may be moved without undue danger to his health. The services as indicated above are subject to the availability of space in the Infirmary. Twenty-two beds at present are ready for use.

Student Insurance

A voluntary insurance plan is available to students to supplement the medical care offered by the Health Service. This plan provides for payment for hospitalization, surgeon, and consultant's fees, and other medical costs throughout the year, both in Morgantown and elsewhere. For cost of this insurance and details concerning coverage see the brochure available at the Health Service.

LIBRARY

The Library provides books and related materials for teaching, research, and cultural purposes. It maintains well-balanced collections in all subject fields included in the University curricula. Although primarily intended to supply the needs of the faculty and students of the University, the collections are available to any resident of West Virginia through the Library Extension Service Department. Facilities are available for the reproduction of material by microfilm and photostat.

The holdings of the University Libraries include 500,000 books and government documents, 33,500 maps, 8,100 reels of microfilm and over 50,000 technical reports. The bulk of this material is housed in the General Library. The other major collections are the Agriculture-Engineering Library (36,000 volumes), the Law Library (64,000 volumes), and the Medical Center Library (53,000 volumes). Some 4,000 periodicals are received currently. The Library is a depository for the United States Atomic Energy Commission.

The West Virginia Collection, located in the General Library, contains over three million manuscripts, papers, and records relating to the history and development of the State. The Audio-Visual Department has some 1,800 educational films and 600 filmstrips, as well as 3,000 recordings.

During regular sessions, except on holidays and vacations, the Library is open from 7:55 A.M. to 10:00 P.M., Monday through Friday; from 7:55 A.M. to 5:00 P.M. on Saturdays; and from 2:00 P.M. to 10:00 P.M. on Sundays. During the Summer Session the weekday hours are from 7:55 A.M. to 9:00 P.M.; and only the Reserve Collection is available on Sundays from 2:00 P.M. to 5:00 P.M. During periods when the University is not in session, the hours are from 9:00 A.M. to 5:00 P.M. Monday through Friday; 9:00 A.M. to 12:00 noon Saturdays; closed all day Sundays and holidays (New Year's Day, Memorial Day, July 4, Thanksgiving Day, and Christmas Day). Changes in scheduled hours are posted in advance.

COMMUNICATIONS AND PUBLICATIONS

University Broadcasting

West Virginia University entered into the field of educational broadcasting in 1938 when Station WMMN, Fairmont, began originating a series of radio programs from the University campus. Since that date, radio and television activities have increased and expanded steadily. The University is active in broadcasting through all of West Virginia's radio frequencies and television channels, and teaches a wide variety of courses in programming and production to students in several fields.

The Office of Educational Broadcasting is responsible for the planning, production and distribution of radio and television programming for state and area stations. These programs are of an educational, informational or entertaining nature.

Present campus facilities include a fully-equipped radio broadcasting studio and control room and preparation facilities for planning television programs. Currently, the television programs are produced at area stations, where they are video taped for distribution to other channels.

Student participation in programming is encouraged through classes in the Department of Speech, the School of Journalism, and the College of Education. Students actually participate in programming and production in laboratory hours as part of their regular curriculum in the different courses.

College of Agriculture, Forestry, and Home Economics produces its own programs through the Cooperative Extension Service Communications and Visual Aids Office and also participates in programming through the Office of Educational Broadcasting.

Coverage of University sporting events is under the supervision of the Athletic Council and the office of the Director of Intercollegiate Athletics.

West Virginia University Television Network—Nine West Virginia television stations via live, video tape, and film programming join together to carry special series of University programs.

Special Programs—Productions are presented regularly over area television stations including WBOY-TV, Clarksburg; WTRF-TV, Wheeling; and WQED-TV, Pittsburgh.

West Virginia University Radio Network—More than 40 West Virginia radio stations carry weekly programming from the University. These programs cover a wide variety of subjects and originate from every area of the University.

Special Programs—Productions and specific subjects are made available to stations on regular schedules; these programs are in addition to the weekly offerings.

Communication Arts Center

This Main Campus building is the future location of the Department of Speech training facilities for television and radio students; production facilities for television and radio programming by the Office of Educational Broadcasting, and for on-campus, closed-circuit teaching; and the Audio-Visual Resources Center. Construction on this three-phase building has already begun; it will be located behind the Administration Building.

The television and radio areas will include two large television studios, two television control rooms, television projection and video tape room, two radio studios, three radio control-room studios, and the offices and other essential areas. The facilities will be equipped with up-to-date cameras, tape recorders, audio equipment, and components.

Publications

The following publications are issued regularly at the University:

1. The *West Virginia University Bulletin* is issued monthly. The series includes this *Catalog* and the *Announcements* of the various colleges, schools, divisions, and other occasional publications.

2. The bulletins and circulars of the Agricultural Experiment Station.

3. The circulars of the Cooperative Extension Service, including *Farm Women's Club* leaflets, 4-*H Suggestions, Treasures of the Trail,* and special pamphlets.

4. Cooperative News Service bulletins published weekly by the College of Agriculture, Forestry, and Home Economics.

5. The bulletins of the Engineering Experiment Station and of the School of Mines.

6. The *West Virginia Law Review,* official publication of the West Virginia Bar Association, edited by the faculty of the College of Law.

7. Miscellaneous publications under the title of *Philological Papers* or *Biological Studies.*

8. *The Student Directory,* annual directory of the student body, published by the University Book Store.

9. The annual *Proceedings* of the West Virginia Academy of Science.

10. The West Virginia *Fourth Estatesman,* a quarterly publication edited by the faculty of the School of Journalism.

11. *Notes for New Mountaineers* is published under the direction of the Office of Publications. It is distributed to each member of the entering class, to transfer students, and to foreign students.

12. *The Faculty Directory* is issued in the fall by the Office of Publications.

13. Miscellaneous publications of the Bureau for Government Research and the Bureau of Business Research.

14. The *Daily Athenaeum,* student-edited newspaper, is published Tuesday through Friday mornings by students of the School of Journalism. Heads of the editorial and business staffs are appointed by the University Committee on Student Publications from a list of eligible candidates certified by the Dean of the School of Journalism.

15. The *Monticola,* student yearbook, is published by upperclass students. The editorial and managerial staff is appointed by the University Committee on Student Publications.

CAFETERIA

The Main Campus Cafeteria is open for three meals daily except Sunday. There is no breakfast on Sunday. The cafeteria is open every weekend while school is in session. It observes all University holidays and opens and closes with the University schedule. Banquets and reservations can be arranged. The Evansdale Cafeteria, located in the Agricultural Sciences Building, is open for snacks from 7:30 A.M. to 4:30 P.M.,

Monday through Thursday, and closes at 4:00 P.M., Fridays. A hot meal is served from 11:30 A.M. through 1 P.M. daily. Banquets and reservations can be arranged.

BOOK STORE

The University operates on each of its three campuses a complete book and stationery store where students may purchase at discounted prices the books, supplies and professional equipment needed in connection with their class work.

The Book Store on the Main Campus is located in the Book Store Building, with entrances from both Hunt Street and University Avenue. The Medical Center Branch Book Store is in the Basic Sciences Building, ground floor, across from the snack bar. The Evansdale Campus store is in the Engineering Sciences Building, ground floor, across from the student lounge.

The stores sell new and used textbooks and buy back from students their used textbooks. They stock books other than textbooks in all categories, art prints, general school supplies, office supply items, medical and engineering instruments and supplies, physical education uniforms for men and women, sporting goods, and University imprinted souvenir, gift and wearing apparel merchandise.

SPEECH AND HEARING REHABILITATION CLINIC

The Speech and Hearing Clinic, operated under the direction of the Department of Speech, offers services to all students in need of treatment for various types of speech disorders such as articulation, voice, and stuttering problems. In addition, work is done with students who have hearing problems. Non-students who have speech defects resulting from cleft palate, cerebral palsy, brain lesions, deafness, etc. also receive diagnostic workups and therapy if indicated. All work is in charge of professionally trained and fully qualified speech clinicians who have been certified for this type of work by the American Speech and Hearing Association. The clinic contains specially designed rooms which permit individual as well as group therapy with children and adults. Therapists in training at both the undergraduate and graduate level participate in therapy under supervision.

FACULTY ORGANIZATIONS

American Association of University Professors. The West Virginia University chapter of American Association of University Professors has a membership of approximately one hundred and twenty. The present officers are: William D. Barns, president; Wesley M. Bagby, vice-president; and Mary Rose Jones, secretary.

The West Virginia University Faculty Club is composed of teaching and research staff and qualified friends of the University. Graduate assistants and registered nurses are eligible as junior members. With a varied program of social and cultural activities, the club promotes closer ties between the branches of the University. The club house is at 511 North High Street. Officers are: Wesley M. Bagby, president; Victor J. Lemke, Frank L. Evans, Ralph M. White, and Betty Lou Ramsey, vice-presidents, Charles H. Vehse, treasurer, and Virginia T. Perry, secretary.

Student Affairs

DIRECTOR OF STUDENT AFFAIRS

Student activities and welfare are under the administration of the Director of Student Affairs. His office is on the second floor of the Administration Building and his assistant's office is on the third floor.

DEAN OF WOMEN

All interests of women students are in the hands of the Dean of Women. Her office and that of her assistant are on the main floor of Elizabeth Moore Hall.

Standards of Student Conduct

A student is expected to show both within and without the University unfailing respect for order, morality, personal honor, and the rights of others. This rule is construed as applicable at all times, in all places, to all students of the University. A student may at any time be removed from the University if his presence is not conducive to the best interests of the University.

The University maintains very stringent standards of honesty in academic work. Both students and faculty are committed to the discouragement of cheating in all forms. Uniform procedures for hearing, investigating, handling, and disposing of cheating cases are established throughout the University (see page 29).

All matters of discipline are under the jurisdiction of the Director of Student Affairs and the Committee on Discipline. No student may be expelled without approval of the President of the University.

Student Marriages

If any student under the age of twenty-one years, who has not been previously married, intends to marry within the school year, he or she must obtain the consent of the parents* or guardian before such marriage shall be solemnized, in accordance with the provisions of Section 8, Chapter 48, revised Code of West Virginia, 1931.

In order to insure obedience with both the letter and the spirit of this statute and the policy of the University such student, no less than one week before said marriage, must show satisfactory evidence to the Director of Student Affairs that the consent of the parents or guardian as required by the statute has been obtained.

In the event that such student does not make such showing to the Director of Student Affairs, regardless of where the marriage ceremony is performed, he or she may be suspended, and may only be reinstated upon showing satisfactory reason to the Council of Administration why he or she failed to comply with this regulation.

Where both parties to the marriage are students and one has not complied with this rule, both may be suspended.

Return of Books to Library

Students must present a signed statement from the Librarian that they have returned all books and paid all library fines before withdrawing from the University or before graduation.

Campus Parking Regulations

Students are required to observe all rules and regulations of the University concerning automobile parking. Full information is available in *Notes for New Mountaineers* or from the Information Desk located in the Lobby of the Administration Building.

Student Identification Card

An identification card is issued to each full-time student. This card entitles the owner to admission to certain University athletic events, various activities of student government, Health Service, and Mountainlair. Confiscation will result from misuse. The University reserves the right to refuse reissuance of an identification card.

Living Accommodations

The University maintains five residence halls, two for men and three for women. For information as to accommodations and rates, address the Director of Residence Halls.

*Or of the parent living, or, if the parents be living separate and apart, of the one accorded the custody of such person.

The following rules are in effect:

Each student who wants a room in one of the halls must file an application with the Department of Residence Halls. Applications will be accepted after September 15 for the academic year beginning the following September. The applications are held on file until the students have been admitted to the University by the Registrar.

No student will be permitted to live in other quarters until after the residence halls are fully occupied. All women students must live either in residence halls, sorority houses, or in houses approved by the Dean of Women.

In assignment of rooms in these buildings all freshmen shall be required to take rooms therein, no freshman being allowed to live outside the residence halls if there is room in them. In enforcing this rule the following exceptions shall be made:

(1) When the parents or legal guardians of students reside in Morgantown or within commuting distance of the University, these rules shall not apply.

(2) When the home of the student is within such distance that it is entirely practicable for him to live in his home and reach the University by car or otherwise for all his classes, these rules shall not apply.

A student who does not claim exemption for the fall semester to live with parents or guardian cannot claim exemption for the second semester unless the parents in the meantime have moved to Morgantown.

(3) When students above the rank of freshman reside in approved sorority or fraternity houses under the supervision of the Director of Student Affairs and the Dean of Women, these rules shall not apply.

(4) When conditions of employment (such as firemen in various buildings and homes, employment on dairy and experimental farms, etc.) requires residence on the premises, these rules shall not apply. Students so employed should not request reservations for resident space. All women students must receive approval of the Dean of Women before arranging to work for room and board.

When space is needed for underclass women, no senior sorority woman will be permitted to live in Arnold Hall if there is room for her in her sorority house.

Because of the shortage of residence space, rooms are assigned only to students whose homes are in West Virginia. Assignments are for the entire academic year. Students cannot be released at the end of the first semester to live elsewhere.

More detailed information may be found in the *Residence Halls Bulletin,* a copy of which will be furnished by the Director of Residence Halls.

The Off-Campus Housing Adviser is an assistant to the Director of Student Affairs. His office is located at the University Housing Center, 719 College Avenue, and will provide information regarding private housing in Morgantown and vicinity. All graduate women students and all men students requiring living accommodations in private residences, apartments, or houses may write or call upon the Housing Adviser for assistance. Private housing off-campus is available at reasonable rates within easy walking distance of the campus. These facilities will be approved to meet essential safety, health and other desirable environmental conditions of the student. A few private residences are equipped to board students.

Student Government

University student government was reorganized in 1952 under a new constitution providing for three separate departments of government activity: the Student Legislature, the Student Executive Council, and the Student Court.

The Legislature, composed of elected representatives from all colleges and schools, determines policy and exercises control over all student activities proposed by the Executive Council, the administrative body which includes the president and vice-president of the student body, and the president and vice-president of each class. The Court, composed of seven students, handles constitutional revisions and controversial issues of the Legislature and Executive Council.

Student government sponsors many educational and entertaining activities, and coordinates the work of its committee system and of various campus organizations. Besides providing valuable experience in democratic self-government, student government represents the student body with the faculty, administration, and off-campus groups.

PROCEDURAL RULES FOR HANDLING CHEATING CASES

General Statement of Policy

Cheating is condemned at all levels and in all areas of life. Like a crippling malady, it leaves its marks subjectively. Cheating indicates a weakness and inability to meet and face the issues and problems of life. It creates an atmosphere of mistrust, disrespect and insecurity. The effects and influence of cheating will necessarily be reflected in commerce and government and in all of the professions and callings, as well as in the classroom and in the home. Students of the University should act to discourage and eliminate cheating of every kind and character for the moral and mental well-being of themselves and their fellow men. Likewise, it is incumbent on the teaching faculty to remove and eliminate every situation which provides avenues and opportunities for cheating, thereby contributing to the inculcation of the principles of honesty, integrity, self-reliance and self-respect of the students. It is expected that University officials will have little occasion to place in operation the established procedures for handling cheating cases. Through these procedures and by means of a continued awareness, on the part of both the faculty and the students, of the intellectually and morally weakening effects of cheating, a healthy strengthening of the moral fiber of the University community may be envisioned and accomplished.

Definition of Cheating

Cheating may be defined as including:

1. Obtaining help from another student during examination.

2. Knowingly giving help to another student during examination.

3. The use of notes, books, or any other unauthorized sources of information during examination.

4. Obtaining, without authorization, an examination or any parts thereof prior to the taking of the examination.

5. Submitting a report, notebook, speech, outline, theme or other problem for credit that has been knowingly obtained or copied in whole or in part from another individual's academic composition, compilation or other product.

6. Submitting or participating in the submission of a report or examination paper falsely represented as being the result of the original efforts of the submitting student.

7. Altering the record of any grade in any gradebook, office or other record.

8. Any other type of misconduct, offense, or manifestation of dishonesty or unfairness in or relating to the academic work.

Procedures for Hearing, Investigating, and Handling Cases

The deans of the several colleges and schools shall have the authority and shall be responsible for the handling of cheating cases arising or occuring within their respective colleges and schools.

Each member of the teaching faculty and all other University employees, including but not limited to assistants, proctors, office personnel, janitors and night watchmen, shall promptly report, via the department chairman or immediate superior, if any, each known case of cheating, as hereinbefore defined, to the dean of the college or school therewith immediately concerned.

Each case of cheating shall be handled with dispatch, and the dean shall promptly report thereon in writing to the President and shall at the same time place a copy

of such report in the permanent record of the student concerned and forward another copy thereof to the Director of Student Affairs for his permanent records. In all cheating cases involving women students, an additional copy of such report shall be forwarded to the Dean of Women. The report shall include a brief statement covering the facts and circumstances of the case and the discipline applied or recommended.

In cases wherein cheating occurs in a college or school other than that in which the student is registered, the minimum penalty, as prescribed in the paragraph below, shall be applied by the dean of the college or school in which the cheating occurred. In handling such cases the dean shall follow the procedure in paragraph 3 hereof and then immediately refer the case, by transmittal of a copy of the report thereon as prescribed in paragraph 3 hereof, to the dean of the college or school in which the student involved is registered. The purpose of this copy of the report is for information and for imposition or recommendation of such further discipline or penalty as may be warranted. Upon completion of his review of and action on the case, the dean of the college or school in which the student is registered shall thereupon compose his independent written report on the case and transmit same to the President and otherwise distribute copies thereof as provided in paragraph 3 hereof.

The deans and their respective teaching faculties shall take remedial and preventive steps to remove every opportunity for and situation conducive to cheating. Particular attention shall be given to the maintenance of a high level of proctoring in those colleges, schools and departments wherein proctoring is employed and to security against student access to or knowledge of examination and test materials prior to the time of the intended use thereof for student examination and testing purposes. The deans shall exercise their independent discretion as to methods and means of accomplishing these ends and may employ thereof faculty meetings, written instructions or other effective devices and measures.

Penalties for Cheating

The *minimum* penalty for all cases of cheating shall be dismissal from the course and the establishment of a grade of "Failure" in the course, as of the date of cheating. *Unless in the opinion of the dean there are extenuating circumstances which might indicate the advisability of a lesser penalty.*

For a second or subsequent cheating offense, in addition to failure in the course, suspension or expulsion of the student shall be recommended by the dean for the President's action. The office of the Director of Student Affairs shall maintain its records of reports in cheating cases so as to detect and ascertain promptly and accurately the occurrence of second or subsequent cheating offenses and, upon inquiry by the dean, shall promptly advise whether the student has been guilty of any prior cheating offense or offenses.

Suspension or expulsion of a student guilty of cheating may, in first offense cases, be recommended by the dean to the President if the facts and circumstances of the case so warrant or the rules, regulations or policy of the college or school concerned so require.

In cheating cases involving criminal offenses, such as theft of examination or test materials, alteration of records, breaking or entering buildings, offices, desks, safes or filing cabinets, damage to public property and other like or similar misconduct, the academic penalties and discipline as herein prescribed shall be applied and, in addition thereto, the dean of the college or school concerned shall, with the approval of the President, cause the facts of each case to be presented to the Prosecuting Attorney of Monongalia County, West Virginia, for his further investigation and for prosecution by injunction or otherwise as may be warranted. Upon the issuance of a warrant for or the return of an indictment against a student on account of any such offense, the President shall suspend such student from the University pending final prosecution thereon. If the student be acquitted of the offense, his suspension may be vacated, but if convicted of the offense, he shall be expelled from the University.

A student may appeal from the decision or action of a dean in a cheating case to the President for review and reconsideration and the President may thereupon affirm or reverse, in whole or in part, the decision or action of the dean.

In his action on any cheating case, whether on appeal by a student or on recommendation or reference by a dean, the President may consider the case record before him, may further investigate or cause to be investigated the facts and circumstances of the case, and may act personally thereon and dispose thereof, or he may, in his discretion, refer the case to another appropriate University office, committee or agency for review, investigation, consideration and recommendation prior to his final action thereon and disposition thereof.

It is recommended that, in all phases of cheating cases, care and caution will be observed so as to avoid any accusation or charge of cheating or related impropriety which may be without foundation. A false accusation may have serious implications and result in reflection on or harm to an innocent and unoffending student and discredit to the faculty.

CULTURAL ACTIVITIES

The University, through the Committee on Convocations and Public Exercises, provides appropriate and desirable programs for students. The convocations form the basis of the cultural program, but there are others sponsored by various divisions of the University and community.

The University Cultural Series presents a special program of outstanding cultural events during each academic year and summer session, in the area of drama, music, and the dance.

Convocations consist of addresses by distinguished speakers, and musical and other entertainment features of special merit.

During the year students have an opportunity to attend their own legitimate theatre in which plays are presented by the Department of Speech. The University Radio Theatre also is an activity of the Department of Speech.

The University Symphony Orchestra concerts, individual recitals, and glee club concerts are sponsored by the School of Music.

Greater West Virginia University Weekend makes a number of cultural activities available to students and their visiting parents. A modern dance recital, music recitals, religious services, and educational scientific exhibits are of the highest value.

SOCIAL ACTIVITIES

Student social life in the University is a carefully planned and supervised part of a student's life on campus. It is guided in such a manner as to offer a wholesome type of pleasure without curbing the institution's main purpose—education of the student.

Social life is under the supervision of the University Social Committee. The committee has supervision of every social function given by the University or by an organization within it, including fraternities, sororities, and other student societies.

The social program is highlighted during the year by Homecoming Weekend, Mountaineer Weekend, Greater West Virginia Weekend, and Graduation Week. The Homecoming Parade is an annual tradition. The Homecoming Dance, of course, is the climax of the celebration. Mountaineer shenanigans on a special fall weekend, set aside by the students, is the most newly-establishd annual affair. Mountaineer garb, in its truest fashion, prevails at all activities for the two-day program, including classes on Saturday morning. Mountaineer music, hayseed hoedowns, and other attractions provide everyone with a gala time.

Other major dances include the Military Ball, Engineers' Ball, and Golddiggers' Ball.

Associated Women Students

All women students are members of Associated Women Students. The purposes of this association are: (1) to regulate all matters pertaining to the student life of its members; (2) to further in every way a spirit of friendliness and unity among the

women of the University; (3) to increase their sense of responsibility; and (4) to be a medium for maintaining high scholastic and social standards.

Responsibility for directing the work of the Association rests with the Executive Council, composed of the following members: a president, two vice-presidents, a secretary, a treasurer, and a representative from each class. The officers are elected annually. To be eligible for membership on the Executive Council, a woman must have no less than a "C" average in all her class work.

In 1921, the Association was admitted to active membership in the intercollegiate Association of Student Government for Women Students.

Student Organizations

Eligibility for Activities

To be eligible to represent the University in public appearances, a student must be enrolled in the University and must meet the eligibility requirements of the department or school in which the activity originates. The records of those students whose status is questionable should be checked at the Registrar's Office before participation is permitted. This checking should be done by the department or school in question.

To hold an elective or appointive office in a duly recognized student organization a student must be enrolled in the University for at least 12 semester hours; and if in other than his or her first semester in residence, must have maintained a minimum cumulative average of "C," as reported by the Registrar's Office, at the time of election or appointment. After completion of his or her first semester in the University no person shall be pledged to either a social fraternity or sorority unless he or she has attained a cumulative average of "C" as reported by the Registrar's Office at the time of pledging.

Following is a brief listing of all recognized student organizations. Specific details concerning description and membership requirements can be found in *Notes for New Mountaineers* and where applicable in the *Announcements* of the school or college concerned.

ACADEMIC AND SERVICE HONOR SOCIETIES

Alpha Epsilon Delta (Pre-medical)
Alpha Pi Mu (Industrial Engineering)
Alpha Psi Omega (Dramatics)
Alpha Zeta (Agriculture)
Arnold Air Society (Air Force R.O.T.C.)
Beta Gamma Sigma (Business Adm.)
Chi Epsilon (Civil Engineering)
Chimes (Junior women)
Eta Kappa Nu (Electrical Engineering)
Gamma Sigma Delta (Agriculture)
Helvetia (Sophomore men)
Kappa Delta Pi (Education)
Kappa Tau Alpha (Journalism)
Li-Toon-Awa (Sophomore women)
Mortar Board (Highest women's honorary)
Mountain (Highest men's honorary)
Omicron Nu (Home Economics)
Order of the Coif (Law)
Pershing Rifles (Military)
Phi Beta Kappa (Arts and Sciences)
Phi Delta Kappa (Education men)
Phi Epsilon Phi (Botany)
Phi Lambda Upsilon (Chemistry)
Pi Delta Phi (French)
Pi Tau Sigma (Mechanical Engineering)
Psi Chi (Psychology)
Rho Chi (Pharmaceutics)
Scabbard and Blade (Army R.O.T.C.)
Sigma Delta Pi (Spanish)
Sigma Gamma Epsilon (Earth Sciences)
Sigma Gamma Tau (Aeronautical Eng'g.)
Sigma Pi Sigma (Physics)
Sigma Xi (Scientific Research)
Sphinx (Senior men)
Spokes (Women's service group)
Tau Beta Pi (Engineering)
Xi Sigma Pi (Forestry)

Professional Honor Societies

Alpha Delta Theta (Medical Technology)
Alpha Epsilon Delta (Pre-medical)
Alpha Kappa Psi (Economics)
Alpha Tau Alpha (Agricultural Educ.)
Beta Alpha Psi (Accounting)
Delta Sigma Delta (Dentistry)
Delta Sigma Rho (Forensics)
Forestry Club
Kappa Psi (Pharmacy)
Lambda Kappa Sigma (Pharmacy women)
Mu Phi Epsilon (Music women)
Omega Chi Epsilon (Chemical Eng'g.)
Omicron Kappa Upsilon (Dentistry)
Phi Alpha Delta (Law)
Phi Alpha Theta (History)
Phi Beta Pi (Medicine)
Phi Chi (Medicine)
Phi Delta Phi (Law)
Phi Mu Alpha (Music men)
Phi Upsilon Omicron (Home Economics)
Pi Sigma Alpha (Political Science)
Psi Omega (Dentistry)
Sigma Delta Chi (Journalism men)
Theta Sigma Phi (Journalism women)
Xi Psi Phi (Dentistry)

NATIONAL AND LOCAL STUDENT GROUPS

The Art Society
Advanced Cadet Class
Agriclub
Alpha Phi Omega
American Chemical Society
American Institute of Chemical Engineers
American Institute of Electrical Engineers and Institute of Radio Engineers, joint branch
American Institute of Industrial Engineers
American Institute of Mining, Metallurgical, and Petroleum Engineers
American Marketing Club
American Pharmaceutical Association
American Society of Agricultural Engineers
American Society of Civil Engineers
American Society of Mechanical Engineers
Associated Women Students
Block and Bridle Club
Campus Ecumenical Council
Cavaliers
Cavalettes
Collegiate F.F.A. Chapter
Cosmopolitan Club
Dairy Science Club
Diogenes Club
Dolphin
Engineering Council
Fi Batar Cappar
Home Economics Club
Il Circolo Italiano
Institute of Aerospace Sciences
Interfraternity Chaplain's Council
Interfraternity Council
Mathematics Club
Men's Glee Club
Mountaineer Party
Mountaineer Poultry Club
Mountaineer Rifle Club
Music Educators' National Conference
Orchesis
Panhellenic Council
Philosophical Society
Physical Education Majors' Club (women)
Press Club
Recreation Club
Russian Circle Club
Society for the Advancement of Management
Spokes
Student National Education Association
Student Party
University Bands
University Choir
University Choral Union
University Debate Team
University Four-H Club
University Outing Club
University Players
University Symphony Orchestra
Varsity Club
Veterans' Club
W.V.U. Chess Club
W.V.U. Amateur Radio Club
W.V.U. Society of Mining Engineers
Women's Glee Club
Young Democrats
Young Republicans
Y.M.C.A.
Y.W.C.A.

SOCIAL ORGANIZATIONS

Fraternities

Alpha Gamma Rho
Alpha Phi Delta
Alpha Sigma Phi
Beta Theta Pi
Delta Tau Delta
Kappa Alpha
Kappa Sigma
Lambda Chi Alpha
Phi Delta Theta
Phi Kappa Psi
Phi Kappa Sigma
Phi Sigma Delta
Phi Sigma Kappa
Pi Kappa Alpha
Sigma Chi
Sigma Nu
Sigma Phi Epsilon
Tau Kappa Epsilon
Theta Chi

Sororities

Alpha Delta Pi
Alpha Phi
Alpha Xi Delta
Chi Omega
Delta Delta Delta
Delta Gamma
Gamma Phi Beta
Kappa Delta
Kappa Kappa Gamma
Pi Beta Phi
Sigma Delta

Fraternity Advisers

Alpha Gamma Rho, Dr. James A. Welch; Alpha Phi Delta, Frank Scalise; Alpha Sigma Phi, Francis P. Fisher; Beta Theta Pi, Edwin Crooks; Delta Tau Delta, Dr. J. R. Williams; Kappa Alpha, Dr. Dana Wells; Kappa Sigma, Dr. H. T. Boyers; Lambda Chi Alpha, Charles Kinnaird; Phi Delta Theta, Paul Kidd; Phi Kappa Psi, Harold Shamberger; Phi Kappa Sigma, Ralph White; Phi Sigma Delta, Dr. Victor Lemke; Phi Sigma Kappa, Art Morris; Pi Kappa Alpha, Dr. Jesse F. Clovis; Sigma Chi, Dr. John Welch; Sigma Nu, Ed Kimble; Sigma Phi Epsilon, Stan Romanoski; Tau Kappa Epsilon, Carl Dennler; Theta Chi, Dr. K. C. Westover.

Sorority Supervision

Supervision of all sororities is vested in the Dean of Women's office.

Religious Foundations and Associations

Various State and National church boards have established foundations at the University for the religious education and nurture of students. The churches of Morgantown extend a warm welcome to students of all faiths. The physical plant and equipment of each church is available for social, educational, and recreational activities of students.

Baptist

The Baptist Student Movement at the University is located in the Student Center of the First Baptist Church, 432 High Street. It is sponsored by the American Baptist Convention, and the local church. The B.S.M. includes the Baptist Student Fellowship and the Married Student Fellowship. Their programs encompass church school classes, worship services, evening fellowships, and many other activities. The responsibility for these programs lie with the students and the pastor to students, Rev. Nelson Griffiths.

Catholic

Newman Hall, 1481 University Avenue, is the social and religious center established by the West Virginia Diocese of the Roman Catholic Church for students of that and other faiths. Newman Hall is a beautiful building of English collegiate architecture immediately adjacent to the campus. It includes a chapel, dining room, lounge, game room, and library. The Paulist fathers are the resident chaplains.

Christian

The *Disciple Student Foundation* provides a program for Christian Church students attending the University. The Foundation is sponsored by the Department of Religious Education of the United Christian Missionary Society at Indianapolis, Ind., the Christian Churches of West Virginia and the First Christian Church at Morgantown. These three agencies function through a Student Work Advisory Committee. The First Christian Church is the center for Foundation activities and is located at Grand Street and Cobun Avenue. The Rev. Lawrence Bennett is in charge.

Episcopal

Trinity Church, at Spruce and Willey Streets, is the center for student work sponsored by the Diocese of West Virginia of the Protestant Episcopal Church. This work is under the direction of the rector, the Rev. Donald Rogan, and assistant rector, the Rev. Frederick H. Shriver, Jr. The program includes student worship services and meetings of the Canterbury Club, a chapter of the National Association of Canterbury Clubs, for discussion and fellowship. Canterbury Club meets in Strider Hall, located on the ground floor of Trinity Church.

Greek Orthodox

The *Greek Orthodox Youth of America* conducts student activities at 447 Spruce Street, under the direction of the Father Nicholas Sitaras.

Jewish

The *Hillel Foundation* at the University, 1420 University Avenue, represents the combined efforts of the West Virginia B'nai B'rith Lodges and of the National B'nai B'rith Hillel Foundation to bring the University's students together in religious, cultural, and social activities. Prominent lecturers and speakers are featured at regular intervals by the Foundation for the members of the group and for the general student body. Rabbi Herbert J. Wilner serves as director of the Foundation.

Lutheran

St. Paul's Lutheran Church is the center of Lutheran student activities sponsored by the Student Service Commission of the National Lutheran Council, the Synod of West Virginia, and St. Paul's Lutheran Church. The work is under the direction of the Rev. Richard Rife, local pastor. The program includes regular services of the church and activities of the Lutheran Student Association.

Methodist

Wesley Foundation at West Virginia University is housed in Wesley Methodist Church at 503 High Street and provides a worship and activities center for Methodist students in the University. Facilities are provided for worship, religious education, and fellowship. The students plan and execute the program of education, worship, fellowship, community service, settlement house missions, and other activities. Kappa Phi, Methodist women's club, and Sigma Theta Epsilon, Methodist men's fraternity, are sponsored by the Foundation. David Riffe is the minister to students.

Presbyterian

The *Westminster Foundation* of West Virginia represents the cooperative efforts of the Boards of Christian Education and National Missions of the Presbyterian Church, U.S.A., the Synod of West Virginia of the Presbyterian Church, U. S., and the Presbytery of Winchester, to make the Christian religion a vital factor in the experiences of students and in the relationships which these students sustain while in the University; and also, through guided Christian activities in the mine-camp communities surrounding Morgantown, to train among educated men and women future Christian statesmen. The Rev. Robert Henry, 331 Forest Avenue, is the student pastor and director.

United Brethren

The Student Youth Fellowship of the *Evangelical United Brethren Church* conducts student activities at the Church on Burroughs Street in The Flatts. The Rev. Lejeune Lewis is in charge of a weekly youth fellowship hour.

Other Churches

Other churches, while not having special buildings or workers for University students, make definite contributions in ministering to the religious and social needs of students who belong to their particular faiths. College students are welcome in all the churches regardless of their church affiliations. A complete list of churches and services will be found in the bulletin *Notes for New Mountaineers.*

Y.M.C.A. and Y.W.C.A.

The *Young Men's Christian Association* of West Virginia University is a nonsectarian fellowship of students and faculty united in the desire to encourage personal and social development in the light of religious principles. The *Young Women's Christian Association* is a nonsectarian fellowship of women of the University organized for the purpose of promoting and directing widely varied activities through a religious motive. Both associations are affiliated with their national and international bodies and with the World Student Christian Federation.

Student officers, student cabinets, boards composed of students, faculty, and townspeople, and an executive secretary direct the activities. The various committees, interest groups, and commissions provide not only their immediate ends, but also opportunity for fellowship and leadership training.

Scholarships, Prizes, Awards, Assistantships, Fellowships, and Loan Funds

Many individuals and organizations who are friends and benefactors of West Virginia University and its students have established scholarships for deserving students. Additional information concerning these scholarships may be obtained from the Scholarship Coordinator, 303 Administration Building.

Freshman Scholarships

For Students in the College of Agriculture, Forestry, and Home Economics

Rachel Colwell Scholarship. This tuition scholarship was established and is supported by Phi Upsilon Omicron, professional home economics organization. Alumnae and the active chapter cooperate in providing a tuition scholarship to an entering freshman woman who proposes to major in home economics. Selection is on the candidate's high school record, including experience in such organizations as 4-H and F.H.A. It is in the amount of $100.

Continental Can Company, Inc., Forestry Scholarship. This scholarship, consisting of $1,000 for each of four years, is awarded to a freshman man enrolled in Forestry. The recipient must be a resident of a county in Virginia in which the Continental Can Company owns land. Selection of the recipient is made by the Company.

Danforth Foundation Agricultural Leadership Training Scholarship. A $50 scholarship at the American Youth Foundation Leadership Training Camp, Stony Creek, Michigan. This award is made to an outstanding agricultural freshman. The award is made jointly by the Danforth Foundation and Ralston Purina Company, St. Louis. Selection of recipient is made by the Student Aid and Grants Committee of the College of Agriculture, Forestry, and Home Economics.

Gilbert Lumber Company Scholarship in Forestry. Established in the fall of 1956, this scholarship is for the study of forestry as preparation for work with the lumber industry, and carries an annual stipend of $900 for the school year subject to renewal for a total of four years on the basis of a satisfactory school record for the preceding years, and continued attendance by the recipient. Eligibility is restricted to residents of Mingo, Wayne, Lincoln, Logan, Boone, McDowell, Wyoming, Raleigh, Fayette, Mercer, and Summers counties. Applicants are required to be in the upper 10 per cent of their high school graduating classes, and must accept employment in the lumber industry during two summer vacations while studying at the University.

Harrison County Farm Bureau Agricultural Scholarship. Established in the fall of 1959. To be eligible as a recipient, the applicant must be a male student from Harrison County who has completed high school with a creditable record and who has the additional qualifications of high character, abiding interest in agriculture, and financial need. Previous membership in 4-H and F.F.A., while desirable, are not required, nor is a farm background. This scholarship has an annual stipend of $100.

Kroger Company Scholarships. The Kroger Company will give two scholarships of $250 each to students in agriculture or forestry. Awards are made on the basis of scholarship, and leadership in school, church, F.F.A., F.H.A., 4-H, and other youth activities.

Kroger Company Scholarships. The Kroger Company will give two scholarships of $250 each to students in home economics. Awards will be made on the basis of scholarship, and leadership in school, church, F.F.A., F.H.A., 4-H, and other youth activities.

Sears Roebuck Foundation Agricultural Scholarships. A grant of $2,250 from the Sears Roebuck Foundation of Chicago makes possible the awarding of 10 scholarships each year to deserving men enrolling as freshmen in agriculture or forestry, and to one sophomore in these fields. The freshman grants are of $200 each, the sophomore grant of $250.

Sears Roebuck Home Economics Scholarships. A grant of $600 to the Division of Home Economics from the Sears Roebuck Foundation of Chicago makes possible the awarding of annual scholarships to three deserving women enrolling as freshmen in home economics. Individual scholarships amount to $200 per year.

Southern States Cooperative Scholarship. Established in 1957, this award is made annually to a freshman in agriculture or forestry, the son of a Southern States Cooperative member, a resident of West Virginia, who has two or more years' experience in 4-H or F.F.A. work. The grant is in the amount of $1,200, payable at the rate of $300 yearly.

Standard Oil Company of New Jersey Scholarship. In 1947 the Standard Oil Company of New Jersey provided a four-year scholarship of $200 per year to a man in 4-H Club work in West Virginia. Selection is on the basis of need and ability.

West Virginia Dairy Technology Society Scholarship. The West Virginia Dairy Technology Society has established a Scholarship of $400 to be awarded to an entering freshman who intends to major in dairy manufacturing. The recipient is selected by the Committee on Student Aid and Grants of the College of Agriculture, Forestry and Home Economics on the basis of high school achievement, aptitude, and need.

West Virginia Garden Club's Scholarship in Forestry. Established in 1959 by fifteen graden clubs throughout West Virginia, this scholarship is composed of $200 to be used by a student or students attending the 1962 Forestry Summer Camp and is to be presented by Dr. W. C. Percival, Director, Division of Forestry.

West Virginia Home Demonstration Council Scholarships. These scholarships of $200 are available to three freshman women in the Division of Home Economics. A 2.0 average must be maintained for the second semester in order to retain the scholarship. It is hoped that a good proportion of the recipients will eventually give service to West Virginia by becoming 4-H club agents or home demonstration agents.

For Students in the College of Arts and Sciences

Alpha Chapter of Phi Epsilon Phi Botany Scholarship. This scholarship was established in 1961 by the Alpha Chapter of Phi Epsilon Phi, honorary botany fraternity, to be awarded to a high school senior who has shown interest in making a study of botany. This scholarship will pay University fees for one semester. Each high school principal may nominate one student from his school. Nominations must be received by the fraternity by April 6. The award recipient will be announced at the University's annual Wild Flower Day program.

Columbia Southern Chemical Corporation Scholarship. This award is in the amount of $4,000. It was established for graduates of Magnolia High School (New Martinsville) or for employees of the Columbia Southern Chemical Corporation plant who graduated from any high school. The recipient must be a candidate for work in chemistry, chemical engineering, mechanical engineering, civil engineering, or electrical engineering. The recipient will be selected by the corporation.

Science Talent Search Scholarship. The Board of Governors of the University and the West Virginia Academy of Science in 1949 established this scholarship which entitles a high school senior to the remission of all fees except those payable to State special funds and those chargeable to special services, as well as a cash award of an amount not less than the total remitted by the University. The recipient is selected by the Academy of Science in accordance with its rules.

Sigma Pi Sigma Scholarship in Physics. Established in 1956 by the local chapter of Sigma Pi Sigma, national physics honorary, this scholarship is awarded annually to a West Virginia high school senior chosen on the basis of tests and academic record, and on the recommendation of his high school principal and science teacher. In order to obtain the scholarship, which pays $150 per year, the recipient must enroll in the University with the intention of majoring in physics.

For Students in the School of Dentistry

General Daniel Morgan Scholarship. In the fall of 1959 on behalf of the Veterans of Foreign Wars of the United States, General Daniel Morgan Post No. 548, Morgantown, established a scholarship for an entering freshman. This scholarship will be

given to a resident of Monongalia County who is a student in either the School of Dentistry or the School of Medicine. It has an annual stipend of $400. The student will be selected by the V.F.W. Scholarship Committee on the basis of eligibility and need. Dr. Donald E. Hayhurst, political science, is chairman of the committee.

For Students in the College of Education

Board of Governors Scholarships in Education. In 1954 the Board of Governors established five annual scholarships in education. Each includes four academic years and entitles the recipient to the remission of all fees except those payable to State special funds and those chargeable to special services. Scholarships are awarded to graduating high school seniors who have a desire to become good public school teachers on the basis of scholastic ability and attainment, qualities of good citizenship, evidence of leadership and moral force, and extra-curricular activities. Scholarship holders will register during their first two years in the pre-education curriculum of the College of Arts and Sciences.

For Students in the College of Engineering

Armco Foundation Scholarship in Civil Engineering. This award of $650 yearly will be continued for four years provided the recipient maintains satisfactory standards.

Associated General Contractors of West Virginia Scholarship. Established in 1956, this scholarship has a stipend of $300 for a freshman in the College of Engineering. Scholars are chosen from applicants on the basis of scholarship, with an aptitude for college and engineering study, and interest in engineering and construction.

Columbia Southern Chemical Corporation Scholarship. This award is in the amount of $4,000. It was established for graduates of Magnolia High School (New Martinsville) or for employees of the Columbia Southern Chemical Corporation plant who graduated from any high school. The recipient must be a candidate for work in chemistry, chemical engineering, mechanical engineering, civil engineering, or electrical engineering. The recipient will be selected by the corporation.

International Nickel Company Scholarship. Established in 1956, this award is for a high school graduate interested in engineering (with a preference for the mining, geological, or metallurgical fields). It is for four years, and consists of tuition, fees, and a cash sum of $300 annually for books and a portion of the living expenses.

Pocahontas Fuel Company, Incorporated, Scholarships. In 1956 the Pocahontas Fuel Company, Incorporated, established two undergraduate scholarships, one that started in 1956 and the other that began in 1959. The annual amount of each—$700 for West Virginia students or $1,000 for out-of-state students—is renewable from year to year on the basis of satisfactory scholastic and personal records. These scholarships are for the purpose of studying coal engineering in the College of Engineering.

Union Carbide Engineering Scholarship. This scholarship is to be awarded to an entering freshman. It is for four years at $500 per year. Preference will be given to students entering the mechanical, chemical, or metallurgical engineering field.

For Students in the School of Journalism

All scholarships in the School of Journalism are given on the basis of ability, scholastic achievement, promise for a successful career in one of the many fields of communications media, and need of financial assistance.

Lewis Baker Scholarships. Two scholarships of $100 each were established in 1945 by the late Mrs. Guy Despard Goff in memory of her father, Lewis Baker (1832-99), who founded the Wheeling Register in 1863. Between 1955 and 1957 these two scholarships were maintained jointly by the late Mrs. Ruth B. Thomas, also a daughter of Lewis Baker, and her son, L. N. Thomas. Following the death of Mrs. Thomas, the two scholarships have been maintained by Mr. Thomas, president of the Carbon Fuel Company, Charleston.

Board of Governors Scholarships in Journalism. In 1961 the Board of Governors established three annual scholarships in journalism. Each includes four academic years and entitles the recipient to the remission of all fees except those payable to State special funds and those chargeable to special services. Recipients are selected

according to results of a high school writing contest conducted at the University in the spring. All West Virginia high school seniors who give promise of becoming eligible for regular enrollment in the School of Journalism are eligible to participate in the contest.

Charleston Daily Mail-Gazette Scholarships. Two Daily Mail Scholarships of $100 each were established in 1945 by its editor, the late Walter E. Clark, and its publisher, Fred M. Staunton. From 1945 to 1957 the Mail provided either one or two scholarships each year. In 1958 the scholarships were given by the Newspaper Agency Corporation as agent for both the Charleston Daily Mail and Charleston Gazette. Awards of $100 each will be granted to two students receiving these scholarships.

Morgantown Typographical Union Scholarship. This scholarship is in the amount of $250 yearly and was established by the Morgantown Typographical Union in 1961. First preference will be given to applicants who may be relatives of members of the sponsoring local union; second preference, to relatives of members of other I.T.U. locals; and third preference, to residents of the State. The usual factors of need and academic ability also will be given their customary weight.

Ogden Scholarships. In 1945 the News Publishing Company, Wheeling, established two $200 scholarships in memory of the late H. C. Ogden, West Virginia publisher.

For Students in the School of Medicine

General Daniel Morgan Scholarship. In the fall of 1959, on behalf of the Veterans of Foreign Wars of the United States, the General Daniel Morgan Post No. 548, Morgantown, established a scholarship for an entering freshman. The scholarship will be given to a resident of Monongalia County, who is a student in either the School of Medicine or the School of Dentistry. It has an annual stipend of $400. The student will be selected by the V.F.W. Scholarship Committee on the basis of eligibility and need. Dr. Donald E. Hayhurst, political science, is the chairman of this committee.

Scholarship Fund in Honor of Dr. Thomas L. Harris. Established by the family of Anna M. Broida of Parkersburg, this annual scholarship of $400 will be awarded each year to a worthy student in the School of Medicine. A preference will be given to a student who is specializing in surgery. This scholarship may be held for more than one year depending upon the committee's decision.

The West Virginia Medical Association Scholarship in Medicine. Established by the West Virginia State Medical Association in 1958. The recipient receives a stipend of $1,000 a year for four years of medical training. Recipients are selected by the Committee of the Student Medical Association on recommendation by the Committee on Admissions of the School of Medicine. The recipient must agree to practice medicine in a rural West Virginia community for four years after his graduation with a M.D. degree.

For Students in the School of Mines

Carbon Fuel Foundation, Inc. Scholarship. A scholarship for the study of Mining Engineering offered by the Carbon Fuel Foundation, Inc. This scholarship carries an annual stipend of $600 for an outstanding high school graduate, and is subject to renewal for a total of four years on the basis of satisfactory school record for the preceding year and continued attendance by the recipient. The scholar must be a resident of West Virginia, and shall intend to accept employment in the coal mining industry following completion of the prescribed course in mining engineering.

Coal Division, American Institute of Mining, Metallurgical, and Petroleum Engineers Scholarship. This scholarship was established for outstanding students in the School of Mines. This scholarship is valued at $400 per year, and may be awarded for a period of four years. Awards are made by the Scholarship Committee of the American Institute of Mining, Metallurgical, and Petroleum Engineers. Inquiries should be addressed to the Dean of the School of Mines.

Frank Ellis Christopher Coal Mining Engineering Scholarship. Established in January 1961, by Mrs. Virginia Christopher Farland in honor of her father, Frank Ellis Christopher. Preference shall be given to male resident applicants for the study of mining engineering. It shall be awarded on the basis of ability, performance, character, and need. The annual stipend is $800.

The Johnstown Coal and Coke Company Scholarship. The Johnstown Coal and Coke Company, of Johnstown, Pennsylvania, offers an annual freshman scholarship in Mining Engineering for which graduates from high schools in the vicinity of the company's West Virginia and Pennsylvania operations are eligible to compete. The scholarship provides payment of $750 per year, renewable annually for four years on the basis of satisfactory academic performance. Awards are made by the sponsoring company, and the participating high schools in West Virginia are Cowen, Crichton, Nicholas County, Richwood, and Webster Springs.

North American Coal Corporation Scholarship. This grant-in-aid program was established by the Cleveland firm of the same name, and is available to freshmen enrolling in the School of Mines. There is no fixed number of awards, and recipients are selected by the corporation. Grants range up to $900 yearly, and are renewable from year to year on a satisfactory performance basis.

Oglebay-Norton Coal Company Scholarships. In September 1956, the Truax Traer Coal Company established a four-year scholarship program in mining engineering which is being continued by the Oglebay-Norton Company. The program provides two freshman scholarships each year. They carry an annual payment of $600 plus summer employment and are renewable annually for four years on the basis of satisfactory academic records. Contact the Dean of the School of Mines for further information.

Pocahontas Fuel Company, Incorporated, Scholarships. In September, 1956, the Pocahontas Fuel Company, Incorporated, established two undergraduate scholarships, one that began in September, 1956, and the other that began in September, 1958. The scholarship carries an annual stipend of $700 for West Virginia residents and $1,000 for out-of-state students and is awarded to an outstanding high school graduate who is a citizen of the United States, subject to renewal for a total of four years on the basis of satisfactory scholastic and personal record. The recipient should have a basic interest in coal mining and the course of study should be applicable to that industry.

The Semet-Solvay Scholarships. The Semet-Solvay Division, Allied Chemical Corporation, Bluefield, West Virginia, established in March, 1952, the Semet-Solvay Scholarship in Mining Engineering. This scholarship is awarded to an outstanding high school graduate who is a resident of West Virginia and who will pursue a course in coal mining engineering and will accept employment in the coal mining industry upon graduation. This scholarship pays $600 per year, and is renewable from year to year upon the basis of satisfactory academic work during the previous year. Inquiries should be sent to the Dean of the School of Mines.

For Students in the School of Music

Board of Governors Scholarships in Music. Ten Board of Governors Scholarships in music are available each year for entering freshmen. These scholarships are open to performers on any band or orchestral instrument, as well as to organists, pianists, singers, composers, and theorists. The recipient is entitled to remission of all fees except those payable to State special funds and those chargeable to special services.

The winner of each scholarship must be a graduate of an accredited high school, and will enroll in the School of Music in the fall following the awarding of the scholarship, as a candidate for a degree in music.

Each scholarship will include four academic years, provided that the recipient maintains a scholarship record deemed by the Scholarship Committee of the School of Music to be worthy of continuance of the scholarship.

Auditions are in Morgantown on announced dates.

Winners are selected on the basis of musical ability, scholastic record, and personality. For further information address the Dean of the School of Music.

The Woman's Music Club of Morgantown Scholarship. The Woman's Music Club of Morgantown has established an annual scholarship for a qualified music student from West Virginia with preference, when possible, being given to a resident of Monongalia County. The scholarship has a value of $115 per semester.

For Students in the School of Physical and Health Education, Recreation, and Safety

Grace M. Griffin Scholarship. The Grace M. Griffin Scholarship provides $200

(tuition) for a freshman woman student majoring in physical education. The recipient will be selected by the faculty of the Department of Physical Education for Women.

Recreation Society Scholarship. The West Virginia Recreation Society has established a scholarship for freshmen. Inquiries regarding this scholarship should be directed to the Recreation Department, School of Physical and Health Education, Recreation, and Safety, West Virginia University, or to the Coordinator of Scholarships, 303 Administration Building, West Virginia University.

For Students in Any College or School of the University

Victor E. Albright Scholarship. This scholarship is awarded to a man or woman of good character, born and reared in Preston County and graduated from a Preston County high school in the year in which the scholarship is given.

Anonymous Scholarships. In 1956 an anonymous bequest was established for a scholarship fund to be used by worthy West Virginia students. Scholarships will be awarded from time to time to prospective and/or enrolled students on the basis of high school record and character. Scholarships will be for any chosen field of study and awarded from year to year, and renewed only when scholars have shown satisfactory progress. The single exception to these qualifications is that descendants of the testator shall be given first consideration regardless of his or her place of residence. The number benefiting from this grant will vary to as many as six or more.

Claude Worthington Benedum Scholarships. These scholarships will be awarded to worthy West Virginia high school graduates, selected on the basis of a state wide competitive examination, need, and other qualifications. The average amount is $250 per year, although this may vary according to need.

Board of Governors Achievement Scholarships. In 1945 the Board of Governors authorized the establishment of 25 scholarships to be awarded annually to high school graduates. The scholarships entitle recipients to the remission of all fees except those payable to State special funds and those chargeable to special services.

Father Flynn Memorial Scholarship. This scholarship is awarded to an outstanding student of the graduating class of St. Francis High School, Morgantown, in memory of Father Peter Flynn, 50 years a Catholic priest and for many years a leading Morgantown citizen. It includes tuition and fees, and will be awarded by the Principal of St. Francis High School.

General Motors Scholarships. The General Motors Corporation in 1955 established a program of merit scholarships in the University. The first two were awarded to outstanding West Virginia high school graduates in the fall of 1955. They are granted for four years, so that by the fall of 1958 eight were in operation. Winners are selected on the basis of high scholarship, character, and potential for college study.

Harrison County Alumni Chapter Scholarship. This scholarship, established in 1950, provides tuition fees for an outstanding Harrison County high school graduate. Selection is made by the chapter.

Helvetia Scholarship. In 1956, Helvetia, sophomore men's honorary, established an annual award of $100 to be applied to tuition for a recipient chosen from the "Ten Top Freshmen" on the basis of financial need.

Leyenberger Scholarship Fund. This scholarship was established in 1956 in the memory of a Wheeling Presbyterian minister and his wife. The invested earnings of the original gift of $1,000 (established in the West Virginia University Foundation) are set aside for an annual scholarship grant to a worthy and outstanding student enrolled in the University. The exact value of the grant will vary, and the stipend is awarded on a year-to-year basis.

Loyalty Permanent Endowment Fund of the W.V.U. Alumni Association. This fund, an irrevocable trust with earnings pledged to University purposes, including scholarships, was established by the Alumni Association in 1937. Its principal is derived from contributions by alumni and other friends of the University; and it is administered by a self-perpetuating trust committee composed of three alumni, with the Kanawha Valley Bank of Charleston serving as trustee. During each academic year, this fund supports several University scholarships, all outright gifts of cash to deserving students with no obligation to repay other than a moral one at such time as the recipient feels he is financially able to contribute. An average of about eight students are aided by the program yearly.

Morgantown Woman's Club Freshman Scholarship. This scholarship was established in 1961 for the aid of a graduating senior from a Monongalia County high school to help with tuition and fees expenses for one year. The scholarship will be solicited from all Monongalia County high schools each Spring by the Morgantown Woman's Club.

Olin Mathieson Employees Scholarship. The employees of Olin Mathieson Chemical Corporation (Morgantown Plant) have established a scholarship fund in West Virginia University for the purpose of giving aid and encouragement to children and/or grandchildren of former employees of the Corporation's Morgantown Operation wherever they may now reside, to secure college training in any chosen field of study. The value of this scholarship is $200, and the recipient may continue to receive such grants from year to year for four years if academic and character standards of the University are met. (It is planned to expand this to a double scholarship, providing equal amounts for each of two individuals). The recipient will be chosen by the University, and selection of the applicant will be made on the basis of: (1) ability to do college work, (2) character and personality, and (3) need for financial assistance to attend college. Candidates from any undergraduate class rank may be considered. In case no candidates are available from families of employees for a period of three consecutive years, the University is free to select other worthy recipients who may qualify under these conditions.

John Barton Payne Scholarships. A bequest from the late John Barton Payne, Taylor County native and former president of the American Red Cross (who lived in Kingwood and practiced law in Preston County), gave the University a sum of $12,000, income from which is to be used to aid two young men—one a native of Taylor County and the other a native of Preston County—to attend the University. Financial need and scholastic merit are prime considerations in selecting recipients for this four-year scholarship.

The Deem Rahall Memorial Scholarship. The Rahall family of Beckley established in 1951 a freshman scholarship in the University in memory of Deem Rahall. The scholarship is for an outstanding and worthy graduating senior in Woodrow Wilson High School who desires to attend the University. The annual stipend, awarded for the freshman year only, amounts to $250.

Myrtle Mae Sloan Scholarship. This scholarship was established in 1955 by Miss Viva O. Sloan of Morgantown in memory of her sister. The invested earnings of the original gift of $5,000 (established in the West Virginia University Foundation) are set aside for an annual scholarship grant to a worthy and outstanding student. The exact value will vary, and the stipend is awarded on a year-to-year basis.

Spencer Manufacturing Company Scholarship. This scholarship was established in 1959 by the Spencer Manufacturing Company. The company will pay $100 to the Roane County W.V.U. Alumni Association, for a scholarship to be awarded to a graduate or graduates of a Roane County high school or to an applicant whose legal residence has been in Roane County for at least five years prior to the date of application. The applicant must have been in the upper 15 per cent of his class scholastically, his school citizenship must have been exemplary, he must have participated in extracurricular school activities, and he must show definite need of financial assistance. Interested seniors should contact their high school principals before June 1 of each year.

George E. Stifel Scholarship. Several years ago there was established in Wheeling a trust fund known as the George E. Stifel Scholarship Fund, the object of which is to help deserving graduates of the public schools of Wheeling to obtain college educations. As many as four University students have received aid from this fund simultaneously.

State High School Drama Festival Scholarships. In January, 1953, the Board of Governors of West Virginia University created the State High School Drama Festival Scholarships. Three grants are awarded annually to high school seniors who participate in the finals of the State High School Drama League, held annually on the University campus. Selection is made by a board of judges composed of members of the Department of Speech, and those chosen receive remission of all fees for four years except those payable to special funds and those chargeable to special services. For information regarding participation in the Drama Festival, write to Executive Secretary, State High School Drama League, Department of Speech, West Virginia University, Morgantown, West Virginia.

State High School Forensic Tournament Scholarships. The present five scholarships awarded to high school seniors who participate in the annual State Finals of the Interscholastic Forensic Tournament had their origin in a Board of Governors order of February, 1950. A board of judges composed of staff members of the Department of Speech selects the five outstanding seniors in the tournament as recipients of these scholarships, which carry remission of all fees, except those payable to the State special funds and those chargeable to special services, for four years. For information regarding participation in the annual Tournament, write to: Executive Secretary, Interscholastic Forensic League, Department of Speech, West Virginia University, Morgantown, West Virginia.

West Virginia Interscholastic Forensic Scholarships. In 1950 there were established five University scholarships, two in debate, and one each in oratory, extempore, and interpretative reading, to be awarded annually to graduates of West Virginia high schools. These scholarships entitle the recipients to the remission of all fees except those payable to State special funds or chargeable to special services. Awards are made by the Department of Speech at the finals of the West Virginia Interscholastic Forensic Program on a date to be announced. Each scholarship remains in effect for four years unless revoked for disciplinary reasons, for failure to maintain scholastic standards, or for withdrawal from the University.

For Foreign Students

R. A. Farland Scholarship for Latin American Students. This scholarship was established in 1960 by Joseph Farland, Morgantown, in memory of his father—Richard Ashville Farland. The recipient, a Latin American student, may hold the grant for more than one year, so long as he or she lives up to normal academic and conduct standards of the University. The annual stipend is $800.

Upperclass Scholarships

For Students in the College of Agriculture, Forestry, and Home Economics

Andrew Delmar Hopkins Scholarship in Entomology. This scholarship, established in 1954, is in memory of an internationally known entomologist, for many years director of the West Virginia University Agricultural Experiment Station. It is for $200 per year and is awarded to a worthy senior or graduate student with an interest in entomology, who has demonstrated originality and research ability.

KDKA Agricultural Scholarship. This scholarship is in the amount of $100 yearly, and is made to a junior or senior in agricluture to recognize outstanding leadership, to encourage the use of radio in disseminating agricultural information, and to help train students in broadcasting techniques. It is sponsored by Radio Station KDKA, Pittsburgh.

Ralston Purina Company Scholarship. The Ralston Purina Company of St. Louis established in 1955 an annual scholarship for an outstanding student in agriculture. The stipend amounts to $500 a year.

Sears Roebuck Foundation Agricultural Scholarships. A grant of $2,250 from the Sears Roebuck Foundation of Chicago makes possible the awarding of 10 scholarships each year to deserving men enrolling as freshmen in agriculture or forestry, and to one sophomore in these fields. The freshman grants are $200 each, the sophomore grant is $250.

West Virginia Dairy Products Association Scholarships. This association offers three $250 scholarships each year. Applicants must be sophomores majoring in dairy foods.

West Virginia Garden Clubs' Scholarship in Forestry. This is an award established in 1959 by 15 garden clubs in West Virginia. It is in the amount of $200, and is to be used by a student (or students) attending the Summer Forestry Camp. The funds will be granted at the direction of the Director of the Division of Forestry.

For Students in the College of Arts and Sciences

American Viscose Corporation Scholarship. The American Viscose Corporation of Marcus Hook, Pa., established in 1953 an undergraduate scholarship for a junior or senior majoring in chemistry or chemical engineering. The annual value of the scholarship is $500, and the scholarship alternates between students in the College of Arts and Sciences and the College of Engineering.

Board of Governors Scholarships in Social Work. In 1961 the Board of Governors reduced the number of scholarships in the field of social work to two. These are for undergraduate students with preferences for West Virginia residents. Each entitles the recipient to the remission of all fees except those payable to State sepcial funds and those chargeable to special services.

Edna Nestor Condry Scholarship in Art. This scholarship was established in July, 1961 in memory of Mrs. Edna Nestor Condry by her husband, Dr. R. J. Condry, who is now a member of the clinical staff of the School of Medicine. The award holds an annual stipend of $250. The recipient will be chosen by University scholarship officials in consultation with the Chairman of the Department of Art. Preference is to be given residents of West Virginia with need and talent.

R. M. Davis Scholarship in Political Science. R. M. Davis, late Morgantown coal operator, gave the University the sum of $5,000 to establish a scholarship in the Department of Political Science. The scholarship, with an average value annually of between $300 and $500, is granted to an undergraduate or graduate student whose specialty is international relations. Scholastic standing and qualities of leadership will be given primary consideration.

Charles B. Jolliffe Scholarship. The Radio Corporation of America in 1952 established the Charles B. Jolliffe Scholarship to honor the director of R.C.A. who is an alumnus of the University. The scholarship, valued at $800 per year, is awarded to an outstanding undergraduate student who has elected to major in chemistry, mathematics, or physics.

Morgantown Community Players' Scholarships. These scholarships (generally four in number) were established in 1955. They are for University students participating in Department of Speech activities and/or courses with the following selection priorities: (1) a citizen of the Morgantown area; (2) a citizen of the State of West Virginia; (3) a nonresident student. These students shall be chosen on the basis of talent, industry, and academic achievement during their freshman and sophomore years. Their names are then approved by the Morgantown Community Players. The scholarships are paid during the recipients' junior and senior years in the sum of $100 during each of the two years.

The Morgantown Service League Scholarship. This scholarship provides $200 a year for a full-time student in the Department of Social Work. The recipient must be a resident of West Virginia, and must be approved by the Chairman of the Department of Social Work.

The West Virginia Federation of Women's Clubs Scholarship in Social Work. This scholarship provides $150 a year and is awarded to a full-time student in the Department of Social Work. The recipient, selected by the Chairman of the Department, must be a resident of West Virginia.

For Students in the College of Commerce

West Virginia Consumers Finance Association Scholarship. This association established in 1946 an annual scholarship of $150. This scholarship is for the aid of an outstanding and needy University student who is a resident of West Virginia. In 1953 the association specifically designated this scholarship for the use of an outstanding student in the College of Commerce. Recipients are chosen on the basis of character, academic achievement, and general campus activities.

The West Virginia Banking Association Award. Established in 1961 by the West Virginia Banking Association, this scholarship is awarded to a University student majoring in economics. The award holds a stipend of $700 per year.

For Students in the College of Engineering

American Viscose Corporation Scholarship. The American Viscose Corporation of Marcus Hook, Pa., in 1953 established an undergraduate scholarship for a junior or

senior majoring in chemical engineering or chemistry. The annual value of the scholarship is $500, and it alternates between students in the College of Engineering and the College of Arts and Sciences.

Machinery, Inc., Engineering Scholarship. This scholarship is to be awarded to a worthy senior student of good moral character, a resident of West Virginia, who expects to pursue the field of engineering upon graduation. The amount is $400.

West Virginia Society of Professional Engineers Scholarship. This scholarship is sponsored by the Woman's Auxiliary of the Charleston Chapter of the West Virginia Society of Professional Engineers, Charleston. The recipient must be an upperclass woman in the College of Engineering. She must have a financial need and she must preferably be from Kanawha County, but in any event, a resident of West Virginia. She must have above a 2.000 grade-point average. This scholarship has a cash value of $100 per year.

For Students in the School of Journalism

All scholarships in the School of Journalism are given on the basis of ability, scholastic achievement, and promise for a successful career in one of the many fields of communications media, and need of financial assistance.

Charleston Press Club Scholarships. The Charleston Press Club in 1951 established an annual grant of $200 for sophomores, juniors, or seniors in journalism. This amount is generally awarded in the amount of $100 each to two recipients.

Journaliers' Tuition Scholarship. This scholarship, consisting of $115, was begun in 1958 and is awarded the first semester of each year to a worthy and deserving upperclassman in journalism. The sponsor is Journaliers, men's journalism honorary.

For Students in the School of Medicine

Claude Worthington Benedum Foundation Medical Scholarship. A fund of $1,200 yearly has been granted by the foundation for the aid of medical students with satisfactory academic records who need financial help to complete a given year's course of study. There is no set number.

Joseph Collins Foundation Scholarships. Established in 1951 under a bequest of the late Dr. Collins, physician and pioneer neurologist, these scholarships provide financial support in varying amounts for needy and deserving students. Recipients are determined on the basis of scholarship, interest in arts or letters or other cultural pursuits outside the field of medicine, and on the intention of entering neurology or psychiatry as specialists or of becoming general practitioners. Recipients also must show a need for financial aid. There is no set number.

For Students in the School of Mines

The Central Appalachian Section of the American Institute of Mining, Metallurgical and Petroleum Engineers has awarded three scholarships to male students in Kentucky, West Virginia, and Virginia. These students are eligible to attend any school teaching mining engineering in the area.

The Eastern District of the American Petroleum Institute Scholarship in Petroleum Engineering. This scholarship was established in 1959 by The Eastern District of the American Petroleum Institute. The amount of this scholarship is $500 for one year, and is awarded annually to a University in the Eastern District Area which includes the states of West Virginia, Pennsylvania, Ohio, Kentucky, New York, Virginia, Indiana, and Illinois. It was awarded to West Virginia in 1960. The Scholarship Committee of the Institute will notify the University if a scholarship is to be granted in a given academic year, and will then choose a recipient from recommendations by the faculty of the School of Mines.

Armco Foundation Scholarship. The Armco Foundation of the Armco Steel Company, Middletown, Ohio, established in May of 1954, two scholarships in the field of mining engineering. Each grant provides $250 per academic year. One is awarded to a junior student and the other to a senior student in the School of Mines. Selection of recipients is made on the basis of academic record, character, and personal leadership qualities.

Lorado Coal Mining Company Scholarships. The Lorado Coal Mining Company, beginning in the fall of 1954, provided scholarship grants of $500 each per academic year to two students in the field of mining engineering. Selection of the recipients is made by the Lorado Coal Mining Company with the approval of the Dean of the School of Mines.

Magnolia Petroleum Company Scholarship. This scholarship, in the amount of $400 per year plus fees (not to exceed a total of $500), is awarded to a worthy senior in the petroleum and geological engineering option of mining engineering. It is not available every year, however, for the University shares it with two other institutions.

Socony-Mobil Scholarship in Petroleum Engineering. This is essentially an award to a senior student in petroleum engineering. It consists of $400 plus fees and tuition, and is based on the candidate's interest in the production side of the petroleum industry, and in his career potential.

The G. Ralph Spindler Scholarship Fund. This scholarship fund for varying types of aid to students in mining engineering was established in February, 1961 in memory of the late Dean of the School of Mines.

Clarence Wayland Watson Memorial Scholarship. In the winter of 1955 the University received an anonymous gift for the establishment of the Clarence Wayland Watson Memorial Scholarship. Scholarship aid in varying amounts from this fund will be awarded from time to time to an outstanding and worthy graduate or undergraduate who will pursue some branch of study in coal development or coal research.

The Youngstown Sheet and Tube Company Scholarships in Mining Engineering. (1) This scholarship will be awarded annually to a junior regularly enrolled in the School of Mines in mining engineering; (2) a student who is enrolled in some other division of engineering, but who has completed the essential requirements of the first two years from mining engineering and who is transferred to the mining department; and (3) a student who is transferred to the School of Mines from another accredited college and who has completed college work equivalent to the first two years of mining engineering at West Virginia University. The selection of the recipient will be on the basis of recommendations of the faculty of the School of Mines, subject to final approval of the sponsoring company. The student will be continued on the scholarship for his senior year on the basis of satisfactory academic performance and recommendation of the faculty of the School of Mines. The scholarship shall provide a direct payment of $200 a semester.

For Students in the School of Music

Band and Orchestra Participation Scholarships. These grants are awarded to those members of the band and orchestra who are especially well qualified, and who, after two years' service, are invited to remain as members of these organizations. Recipients receive allowance in the form of remission of fees. There is no specific number.

Mrs. Russell Mac Murphy Chase Scholarship in Piano. The School of Music was named in the will of the late Mrs. Russell Mac Murphy Chase, the University's first piano teacher, as the recipient of the sum of $1,500, the income of which is to be used for scholarships in the piano department.

Presser Foundation Scholarship. This scholarship, established in 1952 by the Presser Foundation of Philadelphia, provides an annual grant of $400 for the aid of a student in the School of Music of good character and satisfactory standing, who may not carry on his studies without financial help provided by the foundation. Preference is given those who expect to become teachers.

University Band Drum Major Scholarship. The Board of Governors in 1953 established a drum major scholarship to be awarded annually. It entitles the recipient to remission of all fees, except those payable to State special funds and those chargeable to special services.

For Students in the School of Nursing

C. Jeanette Oswald Fund Scholarship. The principal sum is invested, the income of which is to be used to aid students who are registered nurses and wish to continue their work toward a degree in nursing.

Mary Jane Parry Scholarship. The estate of Mary Jane Parry, who for many years was a prominent nurse in Charleston, provides an annual scholarship of $250 to a student in the School of Nursing. Selection of the recipient is based on need and scholastic ability.

Patrons' Scholarships. Grants of $50 to $100 per semester are available from private unrestricted contributions to the School of Nursing. These are awarded on the basis of need.

West Virginia Nurses Association Scholarship. Contributions from 10 districts of the West Virginia Nurses Association provide a nursing scholarship of $250 annually to be awarded to a student who shows outstanding promise of nursing leadership and who has need of financial assistance.

For Students in the School of Pharmacy

The American Foundation for Pharmaceutical Education. This foundation, desiring to encourage higher standards in pharmaceutical education, has provided the School of Pharmacy with a scholarship grant. The grant is in the amount of $200 per year, and is available to juniors and seniors having not less than a "B" average, and is awarded on the basis of scholarship and financial need.

P. A. and Ethel N. George Pharmacy Scholarship. Established in 1950 by Charles A. George of Ronceverte, this scholarship of $50 per semester is available to a student in the School of Pharmacy from either Greenbrier or Monroe counties who needs financial assistance to complete his pharmaceutical education. The recipient must maintain at least a "C" average to continue on this scholarship.

The Pharmacists of West Virginia, individually and collectively, have provided a number of scholarships in varying amounts for capable students in the School of Pharmacy needing financial assistance to aid them in their pharmaceutical education. The final selection of recipients is made by a committee of the West Virginia State Pharmaceutical Association. The following scholarships are a part of this program:

Lynn L. Carson Pharmacy Scholarship
Clarksburg Drug Company Pharmacy Scholarship
Fredlock Pharmacy Scholarship
Griest's Drug Store Pharmacy Scholarship
Henderson Drug Store Pharmacy Scholarship
Ohio Valley Pharmacy Scholarship
Rexall Clubs Pharmacy Scholarship
Southern West Virginia Pharmaceutical Auxiliary Pharmacy Scholarship (for women only)
West Virginia Pharmacy Scholarship

The Pepsodent Presidential Scholarship. This scholarship, consisting of $100 for each of five years, is awarded each year to a person desiring to study for the profession of pharmacy.

For Students in the School of Physical and Health Education, Recreation, and Safety

The Dr. W. Merle Warman Scholarship. This scholarship was established in 1961 by Dr. W. Merle Warman of Morgantown. It provides $200 to a student who has been accepted for enrollment in a school or department of physical therapy. The recipient will be selected by the faculty of the School of Physical and Health Education, Recreation, and Safety. The scholarship is given to encourage physical education students to continue their education in physical therapy.

For Students in Any College or School of the University

Dean Edna Arnold Memorial Scholarship. Associated Women Students established in the spring of 1956 a scholarship in memory of the late Edna Arnold, Dean of Women at the University during the years 1935 to 1955. This scholarship covers full tuition for two semesters. It is presented annually to an outstanding and deserving upperclass woman student.

Claude Worthington Benedum Scholarships. These scholarships are awarded to undergraduate West Virginia residents enrolled in the University on the basis of need, academic ability, moral character, and extra curricular activities. Amounts may vary according to need.

Sophia and Clora Benedum Scholarship Fund. The will of the late Clora Benedum of Bridgeport established a $10,000 trust fund to be known as the Sophia and Clora Benedum Scholarship Fund. The provisions of the will state that "income is to be used in assisting graduates of Bridgeport High School in attending West Virginia University." Two scholarships are awarded each year on basis of top grades of all students from Bridgeport High School.

Board of Governors Student Body President Scholarship. This scholarship is to be awarded to the student elected as president of the student body during the academic year in which he serves most of his term. The scholarship entitles him to remission of all fees except those for special services.

Delta Delta Delta Local Award Scholarship. This scholarship is open to all undergraduate women attending West Virginia University. It is based on need, scholarship, and service to the community. The presentation is made each spring. For further information contact the Delta Delta Delta Sorority House.

Delta Gamma Alumnae Chapter Scholarship. As a part of the sorority's national philanthropic project, the local alumnae chapter awards $100 annually to a deserving blind student.

Monticola Scholarship. The *Monticola,* the campus yearbook, sponsors one tuition and fees scholarship with a payment of $115 for one semester. It shall be awarded twice a year to two different individuals. The awarding shall be based on academic achievement and service to the University. Recommendations will be taken from the Academic Deans and Directors, the Dean of Women, and the Director of Student Affairs. These recommendations will then be reviewed by the *Monticola* Scholarship Committee.

O. J. Morrison, Jr. Memorial Fund. This is a bequest to the University for the establishment of a trust fund for scholarships in memory of O. J. Morrison, Jr., of Charleston, former University track captain. This gift was provided for in the will of Freda Morrison Smith, who died in 1955. Mrs. Smith expressed the wish that the earnings from the trust fund go to aid such boys and girls who for financial reasons would not be able to attend college. Mrs. Smith and Mr. Morrison were two of the five children of the late O. J. Morrison of Charleston, founder of the Morrison department stores.

Olin Mathieson Employees' Scholarship. The employees of Olin Mathieson Chemical Corporation (Morgantown Ordnance Plant) established a scholarship fund in West Virginia University for the purpose of giving aid and encouragement to children and/or grandchildren of former employees of the Corporation's Morgantown operation wherever they may now reside, to secure college training in any chosen field of study. The value of this scholarship is $200, and the recipient may continue to receive such grants from year to year for four years if academic and character standards of the University are met. (It is planned to expand this to a double scholarship, providing equal amounts to each of two individuals). The recipient will be chosen by the University, and selection of applicant will be made on the basis of: (1) ability to do college work, (2) character and personality, and (3) need for financial assistance to attend college. Candidates from any undergraduate class rank may be considered. In case no candidates are available from families of employees for a period of three consecutive years, the University is free to select other worthy recipients who may qualify under the above conditions.

F. F. McIntosh, Jr. Scholarship. This scholarship in memory of F. F. McIntosh, Jr. is awarded annually to a young man or woman from Roane County and has a value of $100 per year. Selection of the scholar will be made by the West Virginia University Alumni of Roane County.

The Louise and Arlen Swiger Scholarship Fund. This is a trust fund given to the West Virginia University Foundation for the support of scholarships in the University to aid worthy students. The scholarship is inactive at this time.

Ella May Turner Scholarship. The will of the late Miss Ella May Turner provided that annual scholarship grants of $50 each be awarded to the two Jefferson County students who earned the highest academic averag s at the University each academic year.

West Virginia Division of the United Daughters of the Confederacy Scholarship. This scholarship was established in 1950 by the West Virginia Division of the United Daughters of the Confederacy. It has a value of $100 per year. Selection is made by the United Daughters of the Confederacy.

For Foreign Students

Board of Governors Foreign Student Scholarships. These two scholarships are available to undergraduate foreign students. Recipients are entitled to remission of all fees expect those payable to State special funds and those chargeable to special services. They are awarded at the discretion of the President of the University, usually to supplement campus or civic awards, or in case of emergency.

West Virginia Federation of Women's Clubs Pan-American Scholarship. The winner of this scholarship is remitted tuition fees by the Board of Governors, and receives room, board, books, and other incidentals from the federation.

West Virginia Home Demonstration Council Foreign Scholarships. This scholarship, established in 1949 for the purpose of promoting better understanding between the rural peoples of the United States and of foreign countries, provides for books, board, and other necessary living expenses, and remission of fees for a foreign student enrolled in the Division of Home Economics.

West Virginia University All-Campus Foreign Student Scholarship. The All-Campus Foreign Student Committee, representative of several campus organizations, in 1951 established a one-year scholarship for the support of a foreign student. Board, room and incidental expenses are paid annually by the committee, with remission of tuition and fees provided by the University.

Graduate Scholarships

For Students in the College of Agriculture, Forestry, and Home Economics

Andrew Delmar Hopkins Scholarship in Entomology. This scholarship, established in 1954, is in memory of Dr. Andrew Delmar Hopkins, internationally known entomologist and for many years director of the West Virginia University Agricultural Experiment Station. It is for $200 per year and is awarded to a worthy senior or graduate student with an interest in entomology, who has demonstrated originality and research ability.

For Students in the College of Arts and Sciences

Board of Governors Scholarships. On March 14, 1961, the Board of Governors authorized the establishment of four scholarships for each class in the Department of Social Work. The scholarships entitle recipients to remission of all fees except those payable to State special funds and those chargeable to special services.

National Society of Colonial Dames of America Scholarship. The society in 1952 established an annual scholarship for the aid of a worthy graduate student for work in the field of early American history. The annual value of the scholarship is $150. This award rotates among several institutions.

R. M. Davis Scholarship in Political Science. R. M. Davis, late Morgantown coal operator, gave the University the sum of $5,000 to establish a scholarship in the Department of Political Science. The scholarship, with an average annual value of between $300 and $500, is granted to an undergraduate or graduate student whose specialty is international relations. Scholastic standing and qualities of leadership will be given primary consideration.

The Children and Family Service Association, Wheeling. A work-study stipend of approximately $1,300 per year may be granted to employees of that agency or candidates for employment desiring to make commitment to work year-for-year. Preference given to second-year students. Candidates must have been admitted for graduate social work education. Applications for graduate social work education may be obtained from Department of Social Work.

Family Service Association of Lycoming Valley, Williamsport, Pa. Variable amount, year-for-year commitment required. For information inquire of: Robert Janos, executive-director, Family Service Association, Williamsport, Pa.

Family Service of Cincinnati and Hamilton County, 2343 Auburn Ave., Cincinnati 19, Ohio. First- and second-year grants are available to students who are able to accept commitment to work at agency for a minimum of one year (preferably longer) following training. Preference to those who have had previous social work experience. Inquire of Department of Social Work.

Family Service of Lynchburg, Virginia. Scholarship of $1,500 for first year and at least $1,500 for second year. Commitment required. Address inquiries to Department of Social Work.

Family and Children's Service, 808 House Bldg., 4 Smithfield St., Pittsburgh 22, Pa. Scholarships available, preferably to second-year students who plan employment at agency for at least one year thereafter. Admission to Department of Social Work required before applying to agency.

Family and Children Service, 708 Commerce Bldg., Erie, Pa. Applicant must be in second year of graduate work. Preference given to Erie and Erie County residents. Acceptance of scholarship carries obligation to accept employment with agency for one year following completion of course, if employment is offered. Inquire of Department of Social Work.

Family Service Association of Wyoming Valley, Wilkes-Barre, Pa. Approximately $1,000. Year-for-year commitment required. Inquire of: Miss Dorothy Cohen, executive director, Family Service Association, Wilkes-Barre, Pa.

Family Service Society, 309 Wick Bldg., Youngstown 3, Ohio. Scholarships of $1,800 for first year and $2,000 for second year. Commitment year-for-year. Field work in a family service agency for one period is required. Address inquiries to: Earl D. Morris, executive secretary, or to Department of Social Work.

Family and Children's Service, Harrisburg, Pa. Scholarship for graduate in social work education. Variable amount. Year-for-year commitment. Inquire of: Mrs. Lenore S. Meffley, executive secretary, Family and Children's Service, 201 South St., Harrisburg, Pa.

Jewish Family and Children's Service, 508 Third Ave., Pittsburgh 19, Pa. First- and second-year scholarships available for students who plan to do field work in agency. Commitment one year of employment after graduation for each year of scholarship. Apply to Department of Social Work.

Jewish Family and Children's Service, 508 Third Ave., Pittsburgh 19, Pa. First-, second- and third-year grants available. Either field work or employment commitment required. Admission to accredited school required before applying to agency. Inquire of Department of Social Work.

The Junior Leagues Scholarship. This scholarship, providing $200 a year for a graduate social work student, was established in 1942. It is jointly supported by the four leagues of West Virginia. Applicants must be residents of the State, and all applications are to be addressed to the Department of Social Work.

Maryland Department of Welfare Work-Study Plan. By arrangement with the West Virginia University Department of Social Work, employees of the Allegheny County Welfare Board, the Garrett County Welfare Board (and other local offices within commuting distance of Morgantown) may undertake two years of graduate social work education while employed by the agency at approximately $275 per nine months. Admission to the school is determined in the regular way. Field work is planned in advance in a unit of the Maryland Department of Welfare. Inquiries should be addressed to Chairman, Department of Social Work.

Mental Health Traineeships. Four to six traineeships in the amount of $1,800 per year for first-year students and $2,000 for second-year students are available from the National Institute of Mental Health, U. S. Department of Health, Education, and Welfare. Candidates who plan to prepare for a career in psychiatric social work are eligible to apply. Admission to the Department of Social Work for graduate study is a prerequisite. Inquiry or applications are to be made to the Department of Social Work.

The Morgantown Service League Scholarship. This scholarship provides $200 a year for a full-time student in the Department of Social Work. The recipient must be a resident of West Virginia, and must be approved by the Chairman of the Department of Social Work.

Pennsylvania Department of Welfare, Bureau of Children's Services, Educational Stipends. These stipends are an approximate amount of $275 per month and are available for persons who want to secure training in social work before beginning employment with Child Welfare Services, as well as for staff members who may apply for Educational Leave for professional training. Candidates for scholarships will be selected on the basis of their interest in Rural Child Welfare and their potentialities for successful performance in the profession of social work. They must: (1) meet the minimum qualifications for employment; (2) be able to qualify for admission to an accredited school of social work; and (3) be interested in public child welfare in rural counties and free to work in any part of the Commonwealth on a commitment of one year of employment for each year of training received. Applications should be made to Miss Jean Farquhar, Training Advisor, Bureau of Children's Services, Department of Welfare, Harrisburg, Pa.

Rehabilitation Traineeships in Social Work. Four or more traineeships in the amount of $1,800 per year for first-year students and $2,000 for second-year students are made available by the Office of Vocational Rehabilitation, U. S. Department of Health, Education, and Welfare. Candidates who plan to prepare for future work in rehabilitation of the physically or mentally handicapped are eligible to apply. Admission to the Department of Social Work for graduate study is prerequisite. Inquiry or application should be made to the Department of Social Work.

United Fund of Kanawha Valley. Educational Stipends in Social Work. Two stipends of $1,500 per year each are available to candidates who desire to serve, upon completion of social work education, in one of the agencies in the Kanawha United Fund area (Charleston, West Virginia and vicinity). Two agencies currently designated to receive and grant these stipends are the Family Services of Charleston and the West Virginia Children's Home Society. Application is made to Department of Social Work.

Family Service of Charleston. See *United Fund* (above). Inquire of: Miss May Buckingham, executive secretary, Family Service of Charleston, 1117 Virginia St., Charleston 1, W. Va.

West Virginia Children's Home Society (including Davis Child Center). See *United Fund* (above). Inquire of: Mrs. Betty Heavener, director, Washington St., E., Charleston, W. Va.

U. S. Veterans Administration, Department of Medicine and Survey, Social Service, Paid Field Work. Second-year students whose field placements are in the social service of a Regional Office or Hospital, may apply for status of paid field work "employee." Remuneration is $2.40 per hour, that is, approximately $1,100-$1,900 during a block placement.

The West Virginia Federation of Women's Clubs Scholarship in Social Work. This scholarship provides $150 a year and is awarded to a full-time student in the Department of Social Work. The recipient, selected by the Chairman of the Department of Social Work, must be a resident of West Virginia.

West Virginia Department of Public Assistance Scholarships. These educational leave stipends, available from the Social Service Division and The Child Welfare Division, amount to $175 per month plus dependents' allowances and tuition. They are available to employees of the Department, including applicants who are accepted for employment with a view to obtaining graduate education in social work. The recipient agrees to work for the Department of Public Assistance at least one year for each year of educational benefits received. In exceptional circumstances, employees may receive stipends to complete the senior year in college. Application for the stipend is made to Mr. Benjamin Guy III, Chief, Division of Social Service, or to Miss Lillian Nagy, Chief, Division of Child Welfare. Applicants must have been granted admission for graduate education in social work; applications to West Virginia University should be addressed to the Department of Social Work.

For Students in the School of Dentistry

Board of Governors Dental Scholarships. By action of the Board of Governors of West Virginia University, twenty dental scholarships were established in 1961. The scholarships, divided equally between the four dental classes, provide for the payment of the recipients' tuition and registration fees.

To be eligible to receive a Board of Governors Dental Scholarship, applicants must have been enrolled or admitted to the School of Dentistry and must rank above

the fiftieth percentile of their class in the School. In the case of entering freshmen, distinct professional promise, as indicated by performance on the Dental Aptitude Test, is used as a criterion for selection.

The Board of Governors Dental Scholarships are awarded for the number of semesters remaining in the normal course of the recipient's dental education. Such continuation, however, is assured only if a recipient maintains his acadmic position in the upper fiftieth percentile of his class (unless probationary status is recommended by the Supervising Committee), and if he shows evidence of leadership and good professional attitudes and maintains a satisfactory moral character.

For Students in the College of Education

Lakin Roberts Memorial Scholarship. This scholarship is open to graduate students in education and is worth $200 per year.

For Students in the College of Law

Board of Governors Scholarships. In 1961 the Board of Governors established four annual scholarships for each class in the College of Law. Each scholarship entitles the recipient to waiver or remission of all tuition and fees except those covering miscellaneous student activities and special services. These scholarships are awarded to students who establish a reasonable case of need for financial help and who have demonstrated academic achievement and professional promise.

In awarding scholarships in the first-year class, special emphasis will be given to need for financial assistance; academic achievement and professional promise for members of this class will be weighed on the basis of the applicant's collegiate record, including extracurricular activities, but in no event will an applicant be considered unless he was graduated with at least an over-all B average. To be awarded a scholarship in his second or third year, a student must have a C+ average on his law school work. A scholarship awarded to a student will be continued for his remaining year or years if his financial need continues unchanged and he maintains a C+ average on his work in the College of Law.

Applications must be submitted on forms which may be obtained from the Secretary, College of Law, West Virginia University. Applications for each school year will be accepted between May 1 and September 1 preceding that year. Applications received after September 1 will be considered only in the event of a vacancy.

For Students in the School of Medicine

Board of Governors Scholarships. On March 14, 1961, the Board of Governors authorized the establishment of six scholarships for each class to be awarded annually to graduate students in the School of Medicine. The scholarships entitle the recipients to remission of all fees except those payable to State special funds and those chargeable to special services.

For Students in the School of Mines

Clarence Wayland Watson Memorial Scholarship. In 1955 the University received an anonymous gift for the establishment of the Clarence Wayland Watson Memorial Scholarship. Aid in varying amounts from this fund will be awarded from time to time to an outstanding and worthy graduate or undergraduate who will pursue some branch of study in coal development or coal research.

For Students in Any College or School of the University

The Masonic Grand Lodge Scholarship. This scholarship to be awarded to a graduate student who is a candidate for either the Master's or Doctor's degree. Student must have a high scholastic rating in his undergraduate or in his graduate work, not hold any other fellowship, scholarship, assistantship or grant, must enroll for a full program of courses, and be recommended by the Chairman of his Depart-

ment. The annual stipend is $800 for one year only. Applications should be submitted to the Dean of The Graduate School, on or before July 15.

Sphinx Scholarship Award. This scholarship, established in the fall of 1960 by Sphinx, senior men's honorary, is to be awarded to a senior male student. The recipient must have attained a 3.0 over-all average for his previous three years of study, and also be in need of financial assistance.

Prizes and Awards

Awards for prizes in the University are made in accordance with the following rules:

No composition, in whole or part, shall be submitted in competition for two prizes.

Only students pursuing courses leading to baccalaureate degrees are eligible for any prize, except for the James F. Brown Prize.

No student shall be eligible to enter any contest who has not been a resident student in this University for at least one semester preceding the semester in which the contest is to be held, and who, unless he be a competitor for the James F. Brown Prize, is not a resident student in good standing in the University in the semester in which the contest is held.

No successful contestant may become for a second time a competitor for the same prize.

If in any contest the judges find no manuscript of sufficient merit, there shall be no prize awarded for that year.

Students intending to compete in any essay-writing contest must notify the Scholarship Coordinator no later than March 15. Three typewritten copies of each essay must be in the hands of the chairman of the committee not later than May 15.

The conditions upon which the awards in the several contests are made may be learned upon application to the office of the Scholarship Coordinator.

For Students in the College of Agriculture, Forestry, and Home Economics

Borden Agricultural Award. This award, established in 1954 for an initial five-year period, is in the amount of $300 annually. It is made to the senior student majoring in agriculture who has achieved the highest grade in all college work preceding the senior year, and who has included in his curriculum two or more dairy courses. It is supported by the Borden Company Foundation.

Borden Home Economics Award. This award, established in 1954 for an initial five-year period, is in the amount of $300 annually. It is made to the senior student majoring in home economics who has achieved the highest average grade in all college work preceding the senior year, and who has included in her curriculum two or more courses in foods and nutrition. The award is supported by the Borden Company Foundation.

The La Verne B. Davis Home Economics Award. This award of $25 was established and is supported by Mr. and Mrs. Richard Earle Davis. It is presented annually to the graduating senior in the Division of Home Economics who has maintained the highest scholastic average during four years of residency.

The Koehler Award. This award, sponsored by Tau Chapter of Phi Lambda Upsilon, holds a cash value of $100. It is to be given to a sophomore student majoring in chemistry, chemical engineering, pharmacy, or agricultural science with the following requirements: a 3.5 grade-point average on a minimum of 11 hours of chemistry course work, and a 3.5 grade-point average on total academic record for a minimum of three semesters (not including summer terms).

The Charles Pfizer and Company Award. This award goes annually to an outstanding student who plans a career in extension work.

The Virginia Dare Award. An award of $25 and a plaque goes annually to the outstanding senior student in dairy foods. It is maintained by the Virginia Dare Extract Company.

West Virginia Junior Chamber of Commerce Wildlife Management Scholarship Award. This award consists of $500 annually to the winner of a state-wide essay con-

test on "Financial Benefits to Be Derived From a Local Conservation Project." The winner also must meet all entrance requirements of the University.

For Students in the College of Arts and Sciences

The Waitman Barbe Memorial Prize. The English Club offers a prize of $25 in memory of Waitman Barbe, poet, scholar, and adviser to the English Club duing his long term of faculty service. It is awarded to some student regularly enrolled as a junior or senior for creative work in the field of literature, either in prose or in poetry or in both. The minimum length of such compositions must be 4,000 words of prose or 100 lines of poetry.

The William Jennings Bryan Prize. The Honorable William Jennings Bryan, before his death, gave a sum of money, the actual income of which is offered as a prize ($50) to the student in the University who shall write the best essay on some subject in the science of Government.

Chi Omega Sorority Prize. This $15 prize goes to the sociology major with the highest academic ranking. All work done at the University is taken into account. No student is eligible to compete unless his junior or senior years have been spent at West Virginia University.

The Koehler Award. This award, sponsored by Tau Chapter of Phi Lambda Upsilon holds a cash value of $100. It is to be given to a sophomore student majoring in chemistry, chemical engineering, pharmacy or agricultural science with the following requirements: a 3.5 grade-point average on a minimum of 11 hours of chemistry course work, and a 3.5 grade-point average on total academic record for a minimum of three semesters (not including summer terms).

The West Virginia Society of the Sons of the American Revolution Award. This award of $100 goes each year to the writer of the best essay on a special topic in the field of West Virginia history during the colonial and early national periods.

For Students in the College of Commerce

West Virginia Society of Certified Public Accountants Award. In the fall of 1957 the West Virginia Society of Certified Public Accountants established one or more awards of $100 each to be given annually to a student at West Virginia University in the last semester of his junior year as an accounting major, the selection of such student to be made by the Dean of the College of Commerce.

The Erwin Award in Accounting. This $100 award goes in late April each year to a student in the College of Commerce majoring in accounting. The college applies the criteria of scholarship, character, and interest in accounting in selecting winners.

The West Virginia Tax Institute Award. This $100 award goes annually to a senior in the College of Commerce on the basis of scholarship, character, professional promise, and interest in the field of taxation.

The West Virginia Banking Association Award. In 1961 the West Virginia Banking Association established a scholarship award to be given to a student in the College of Commerce. It holds an annual stipend of $750. The recipient is chosen by the Scholarship Committee in the College of Commerce.

The Daniel S. Witschey Award. Robert E. Witschey offers $50 each year to an outstanding student majoring in accounting.

For Students in the College of Engineering

The Koehler Award. This award, sponsored by Tau Chapter of Phi Lambda Upsilon, holds a cash value of $100. It is to be given to a sophomore student majoring in chemical engineering, chemistry, pharmacy, or agricultural science with the following requirements: a 3.5 grade-point average on a minimum of 11 hours of chemistry course work, and a 3.5 grade-point average on total academic record for a minimum of three semesters (not including summer terms).

Dr. H. P. Simons Award in Chemical Engineering. An award, established in 1961 by Omega Chi Epsilon, chemical engineering honorary, in honor of Dr. H. P. Simons. It consists of $25 to be awarded to the chemical engineering senior who made the greatest academic improvement as a junior.

The James Weimer Memorial Award. This award pays tuition for one year. The donor desired anonymity. The award is given to the senior making the highest average his first three years in chemical engineering.

The Rufus A. West Award. The late Rufus A. West, a former instructor, because of his interest in the college and in the young men who have been and are students therein, and with the further idea of promoting sound scholarship, bequeathed $10,000, the income from which is used as an annual award to the member of the graduating class of the College of Engineering who has maintained the highest scholarship as measured by his grade-point average on the last 35 hours of University credit.

For Students in the College of Law

The James F. Brown Prize. James F. Brown, alumnus, "with a desire to stimulate the young men of the State to fuller consideration of the 'inalienable rights of mankind,' and especially those guaranteed by the Constitutions of the State and the United States," has contributed $5,000 to the University, the income from which is to be "used as a prize for the best essay or paper each year on the subject of the individual liberties of the citizen as guaranteed by the Constitutions." The income may be given as a single prize, or it may be divided into a first and second prize. For the present the award is made as a single prize of $200. The subject for the essay for the current year may be obtained from the secretary of the College of Law. Any regularly enrolled student within one year after receiving an undergraduate degree may compete for the prize. Graduates of the College of Law or the School of Medicine, or holders of any postgraduate degree are not eligible to compete for the prize.

The Nathan Burkan Memorial Prize. The American Society of Composers, Authors, and Publishers has established the Nathan Burkan Memorial Competition, open to the leading universities and colleges of the country that offer courses in law. A prize of $100 is available to each institution, to be awarded to the student in the graduating class in law who prepares the best paper on the subject of "Copyright Law."

The Frank Bliss Enslow Legal Scholarship Award. The late Mrs. Frank Bliss Enslow of Huntington provided in her will a trust fund in support of the Frank Bliss Legal Scholarship at the University. This annual award is restricted to students enrolled in the College of Law, and selection is made on the basis of ability, character, financial status, and scholarship qualifications. Recipients must be residents of West Virginia, and preference will be given applicants from Cabell County. The amount of the scholarship will be determined from year to year. A second-year man holding the scholarship award can repeat as its winner during his final year if conditions warrant.

The Patrick Duffy Koontz Scholarship Awards. The late Patrick Duffy Koontz and Arthur Burke Koontz have donated to the University certain securities, the income from which is used for the purpose of establishing scholarship awards in the College of Law for worthy students from West Virginia. The value of each scholarship is $250, and there are as many as four or five in operation concurrently. These awards are to be made to such second- or third-year students who show outstanding promise with respect to scholastic ability and attainment, moral force of character, and leadership.

The Charles M. Love Award. This award was established in 1954 by a gift from Charles M. Love of Charleston. The purpose is to recognize outstanding contributions made to the *West Virginia Law Review* by students enrolled in the College of Law. Awards are made from time to time by the law faculty in the amount of $50 each.

The Tax Commission Prize. Five members of the State Tax Commission in 1902—W. P. Hubbard, Henry G. Davis, John K. Thompson, L. J. Williams, and J. H. Holt—gave the sum of $1,350, later increased by unawarded sums to $1,500, the income from which is used annually as a prize for the "best original work bearing on matters of taxation in West Virginia." The conditions of the competition are determined by the Council of Administration. The prize at present is in the amount of $50. The subject for the essay for the current year may be obtained from the secretary of the College of Law.

The Tax Institute Award. The West Virginia Tax Institute has established a Tax Institute Award of $100 to be made annually to the student in the College of Law who is judged by a faculty committee to have demonstrated the most interest and to have been most proficient in the study of tax law.

The West Virginia Law School Association Awards. The West Virginia Law School Association has established annual scholarship awards to such third-year member and such second-year member of the student board of editors of the *West Virginia Law Review* as, in the judgment of the faculty of the College of Law, shall have made outstanding contribution to the *West Virginia Law Review.* The amount of each of these two annual awards is $50.

For Students in the Division of Military Science and Air Science

MILITARY SCIENCE AWARDS (Annual)

American Ordnance Association Gold Scholarship Key. The American Ordnance Association awards each year a gold scholarship key to the outstanding senior Army ROTC student commissioned in the Ordnance Corps.

Armed Forces Communications and Electronics Gold Medal Award. The Armed Forces Communications Association awards a medal each year to the outstanding Army ROTC students majoring in Electrical Engineering.

Association of the United States Army ROTC Medal. The Association of the U. S. Army awards each year a medal to the junior Army ROTC student most outstanding in military aptitude.

Lt. James C. Borden, Jr. Memorial Trophy. The West Virginia University Mountaineer Rifle Club and Gamma Pi Chapter of Sigma Nu Fraternity award each year a bronze trophy to the outstanding rifleman on the Varsity Rifle Team. The winner's name is inscribed on a plate on the base of the trophy which remains on permanent display in the Armory.

Department of the Army Superior Cadet Ribbon. The Department of the Army awards each year a ribbon to the outstanding all-around Army ROTC student in each class.

Lt. James E. Marshall Memorial Trophy. The Beta Psi Chapter of Beta Theta Pi Fraternity awards each year a bronze trophy to the most outstanding West Virginia University Army ROTC senior infantry student. The winner's name is inscribed on a plate at the base of the trophy which remains on permanent display in the Armory. A small metal emblem attesting to the honor is presented to the recipient.

West Virginia Reserve Officers Association Medal. The West Virginia Reserve Officers Association awards medals each year to the senior Army ROTC student and sophomore Army ROTC student most outstanding in military aptitude.

West Virginia Society of the Daughters of the Founders and Patriots of America Medal. The West Virginia Society of the Daughters of the Founders and Patriots of America awards a medal each year to the freshman Army ROTC student most outstanding in military aptitude.

West Virginia Sons of the American Revolution Medal. The West Virginia Sons of the American Revolution awards each year a medal to the sophomore Army ROTC student most outstanding in military proficiency.

The National Defense Transportation Association Medal. This medal is awarded each year to 20 outstanding senior students, nation-wide, who are in the upper one-fourth of their classes and are recommended by the Professor of Military Science and the dean of the college in which the students are enrolled.

The Society of American Military Engineers Gold Medal. This medal is awarded each year to 20 outstanding junior and senior students, nation-wide, who are recommended by the Professor of Military Science and the Dean of the College of Engineering as outstanding engineering students of the year.

The Quartermaster Association Medal. This medal is awarded each year to 10 outstanding junior and senior students, nation-wide, who are in the upper one-fourth of their classes and are recommended by the Professor of Military Science and the dean of the college in which the students are enrolled.

The Dr. Ralph Mershon Memorial Award Certificate and Check ($250). The certificate and check are awarded yearly to the outstanding (nation-wide) Distinguished Military Graduate who accepts a Regular Army commission.

The Legion of Valor of the United States of America Bronze Cross. This cross is awarded each year to the outstanding senior student in the U. S. Army XX Corps who has been previously awarded the Department of the Army Superior Cadet Ribbon.

The Professor of Military Science Certificate and Ribbon. This certificate and ribbon is awarded each year to a freshman and sophomore student who is in the upper 10 per cent of his ROTC class, the upper one-half of his academic class, outstanding in military proficiency, and who has contributed to the U. S. Army ROTC program and to the University.

The Professor of Military Science Camp Certificate and Ribbon. This certificate and ribbon is awarded each year to the junior student with the highest over-all summer camp score.

AIR SCIENCE AWARDS

Air Force Association Silver Medal. The Air Force Association presents this award to a senior for outstanding leadership, scholarship, and campus activities.

Boeing Aircraft Award. Presented annually to an advanced cadet who has displayed a continuing interest in flying and possesses outstanding academic achievement and leadership potential.

Chicago Tribune Gold and Silver Medals. Each year this award is presented to one cadet in each Air Science year for military achievement, scholastic attainment, and high moral character.

Colonel Joe W. Compton Gold Key. Presented to a senior cadet for outstanding service to the University, the AFROTC Wing, and for demonstrating high qualities of personality, character, and leadership, in memory of Colonel Joe W. Compton, professor of air science from 1953 to 1955.

General Dynamics Certificate and Trophy. Presented to an outstanding sophomore selected for Advanced AFROTC in a category leading to flight training.

Rifle Team Medals. Presented to the three top-average scorers on the AFROTC Rifle Team. Miniature silver rifles are presented to each member of the AFROTC Rifle Team.

Society of the American Military Engineer Gold Medal. This award is presented to the top 20 juniors and the top 20 seniors in Engineering throughout the nation who are enrolled in Air Science.

Sons of the American Revolution Bronze Medal. Presented to a freshman cadet for exhibiting in his work a high degree of leadership and military bearing.

West Virginia Reserve Officers Association Gold and Bronze Medals. Presented to a senior and to a sophomore cadet for outstanding leadership in campus activities.

National Defense Transportation Silver Medal. Presented to a senior who has demonstrated outstanding leadership qualities, academic achievement, and aptitude for military science and noteworthy service in the promotion of preparedness for national defense.

Armed Forces Communications and Electronics Association Gold Medal and Certificate. Presented to a senior cadet majoring in electrical, electronics, or communications engineering who demonstrates outstanding qualities of military leadership, high moral character, and definite aptitude for military service.

Air Force ROTC Commandant's Certificate. Presented annually to the most outstanding junior or senior cadet at the summer training unit.

Secretary of the Air Force AFROTC Rifle Match Trophy. Presented to the highest scoring rifle team in national match competition.

Air Force ROTC Area Championship Rifle Team Plaque and Certificate. Presented to the highest scoring rifle team within each AFROTC area, excluding the winner of the Secretary of the Air Force ROTC Rifle Match Award.

The Professor of Air Science Academic Medal. Awarded to the student in each air science year who attains the highest grade in air science.

The Air Science Honor Squadron Plaque. Presented each full semester to the AFROTC squadron attaining the highest ratings for performance at all drill periods during the semester.

AFROTC Drill Team Medals. Presented annually to the three outstanding members of the drill team in each air science year. Additionally, all drill team members receive an appropriate ribbon in recognition of their voluntary participation.

AFROTC Sponsor's Trophy. Presented annually to the outstanding AFROTC sponsor as determined by the advanced AFROTC class.

AFROTC Academic Achievement Device. Awarded each full semester to all AFROTC students attaining a cumulative academic grade-point average of 3.00 or

higher and a minimum of "C" or higher in air science for the preceding semester. Any cadet who fails to maintain the criteria described above must relinquish the award until he can again meet the established criteria.

AFROTC Band Ribbon. Presented to each member of the AFROTC band in recognition of his voluntary participation.

For Students in the School of Mines

The Charles E. Lawall Award. This award was created in 1952 through the generosity of D. L. McElroy of Pittsburgh and is given in the first semester of each year to the senior student maintaining the best scholastic average in the first 100 hours of the required curriculum. Students in the coal mining option and the oil and gas option are eligible. The award carries a cash payment of $50.

West Virginia Coal Mining Institute Prize for Students in the School of Mines. In order to stimulate interest on the part of mining engineering students in their profession, the West Virginia Coal Mining Institute offers a prize of $25 each year to a member of the graduating class of the School of Mines. The student must be enrolled in the coal mining option and his scholarship must be the highest of that group as measured by his grade-point average.

West Virginia Oil and Natural Gas Association Prize for Students in the School of Mines. In order to stimulate interest on the part of oil and natural gas engineering students in their profession, the West Virginia Oil and Natural Gas Association offers a prize of $25 each year to a member of the graduating class of the School of Mines. The student must be enrolled in the oil and natural gas option, and his scholarship must be the highest in that group as measured by his grade-point average.

For Students in the School of Nursing

Betty Harris Prize for Freshman Achievement. This cash prize is awarded at the end of the freshman year to the student elected by vote of her classmates and faculty as having been most outstanding during the freshman year.

For Students in the School of Pharmacy

The Central Pharmaceutical Journal Pharmacy Administration Prize. This is an annual $25 prize awarded to the graduating student with the best grades in pharmaceutical administration.

The Gay H. Dent Essay Award. Funds have been provided for awarding $25 to the student of the School of Pharmacy who submits the best essay on some pharmaceutical subject during the second semester of each year. A committee of students selects the subject for the essay and judges the entries.

The Gay H. Dent Prize. Gaylord H. Dent, for many years a successful pharmacist of Morgantown, bequeathed to the School of Pharmacy the sum of $500. The interest on this money is used to maintain the Gay H. Dent Prize, which in some measure typifies the personal traits of the donor. The prize is awarded biennially to the graduating senior who, in the opinion of the members of the senior class, is most likely to succeed in the profession of pharmacy because of a love of service, a genial personality, and natural leadership.

Kappa Psi Junior Scholarship Achievement Award. The local chapter of Kappa Psi, pharmaceutical fraternity, offers an annual award of $25 to the members of the junior class having the highest scholastic average during the year. The name of the recipient is inscribed upon the plaque located in the School of Pharmacy's quarters.

The Koehler Award. This award, sponsored by Tau Chapter of Phi Lambda Upsilon, holds a cash value of $100. It is to be given to a sophomore student majoring in pharmacy, chemistry, chemical engineering, or agricultural science with the following requirements: a 3.5 grade-point average on a minimum of 11 hours of chemistry course work, and a 3.5 grade-point average on total academic record for a minimum of three semesters (not including summer terms).

Rho Chi Award. In order to stimulate scholastic ability, Alpha Mu Chapter of Rho Chi, honorary pharmaceutical society, offers an award of $25 to the student of the School of Pharmacy receiving the highest scholastic average during the first semester (Rho Chi members to be excluded). The award is to be used as partial expense in visiting the pharmaceutical manufacturing concern during the annual visitation.

For Students in Any College or School of the University

Scholastic Improvement Award. This award of $75 and an appropriate key is presented at the close of each regular academic year to the freshman resident of Men's Hall showing the highest grade improvement from the first to the second semester of that year. The award was established in 1958 by the action of the faculty resident and proctors' council, with funds to be provided by the Co-op Fund of Men's Hall.

For Senior Members of Football Squad

The 1928 Football Team Scholarship Cup and Prize. Members of the West Virginia University 1928 Football Team established in October, 1959 a prize for the senior football player who has the most outstanding academic record for the first seven semesters in the University. The prize consists of $100 and an engraved cup, to be placed in an appropriate place at the University, with an individual cup to each winner.

Assistantships and Fellowships

Approximately 65 departmental fellowships and assistantships are available to qualified personnel in several of the University's schools and colleges. In addition, many departments offer part-time employment through a non-salary payroll arrangement. Complete information can be had by contacting the department involved.

Loan Funds

Listed here are all loan funds available to University students. Most of them contain stipulations regarding their use and applicability. They are administered through the office of the Director of Student Affairs, with the cooperation of advisory committees, University officials, and alumni.

For Students in the College of Agriculture, Forestry, and Home Economics

The Baltimore and Ohio Railroad Fund. A special fund for small loans to students in the college has been established by the Baltimore and Ohio Railroad.

Juanita Ferguson Memorial Loan Fund. This fund was established by friends of the late Juanita Ferguson for the purpose of helping worthy juniors and seniors majoring in the Division of Home Economics. Juniors may apply for a $200 loan and seniors for a $300 loan.

The Maude George Memorial Fund. Charles A. George of Ronceverte in 1950 established this fund in memory of his aunt. Eligible University students from Greenbrier and Monroe counties may borrow up to $50 per semester or $100 per academic year, as long as the fund is in effect.

The Heebink Memorial Loan Fund. This fund was established in 1958 in memory of Gerald Heebink, for almost two decades a dairy extension specialist at the University. It is intended to help needy students to get an education in dairying and related agricultural fields.

H. O. Henderson Loan Fund. This fund was established October 10, 1960 (with an initial gift of $2,212.80) by former students, friends, and dairy organizations in recognition of the late Dr. H. O. Henderson's 42 years of devoted service to the dairy industry of West Virginia, and is to be used by students majoring in Dairy Science and other allied fields of agriculture. Second-semester freshmen, sophomores, juniors, and senior students are eligible.

Ruth D. Noer Loan Fund. In February, 1961, the Ruth D. Noer Loan Fund was established from contributions by Home Economics alumnae and friends of the University to honor the former Director of the Division of Home Economics. Loans are restricted to the use of junior and senior majors in the Division of Home Economics.

For Students in the College of Arts and Sciences

The John M. Crawford and David B. Crawford Loan Fund. In 1951 the Parkersburg Rig and Reel Company established the John M. Crawford and David B. Crawford Loan Fund with an initial gift of $5,000 to assist accredited students seeking a degree in engineering or geology and who have financial need. Loans are available to students who are graduates of West Virginia high schools, and who are seeking a degree in engineering (preferably petroleum engineering) or geology.

The Lily Belle Sefton Deatrick Student Loan Fund. Established in 1947 by the Campus Club in memory of Lily Belle Sefton Deatrick, former professor of chemistry, this fund provides small loans for students without interest until after graduation. It is administered by the Dean of the College and the Chairman of the Department of Chemistry.

Charles E. Hare Geology Loan Fund. This fund was established by friends and associates of the late Charles E. Hare, Assistant Geologist of the West Virginia Geological and Economic Survey. Loans are made to students majoring in geology and are limited in amounts of $50 per year or $100 over several years.

The Social Work Alumni Loan Fund. This fund was established in 1951 for the benefit of undergraduate or graduate students in the Department of Social Work, irrespective of residence. Loans are made by the Director of Student Affairs with the approval of the Chairman of the Department of Social Work. No interest is required, and loans are to be repaid within two years after the student has completed his current degree objective.

The West Virginia State Conference of Social Work Fund. This fund was established in 1940. It grants loans, without interest, to eligible full-time graduate social work students who are residents of West Virginia. Detailed information is available from the Chairman of the Department of Social Work.

For Students in the College of Commerce

American Bankers' Association Foundation for Education in Economics Loans. This foundation has assigned to the University three scholarship-loans of $300 each. These will be "awarded only to deserving students of integrity, intelligence, character, competency, and aptitude, whose means of support are dependent wholly or in part on their own labor, to enable them to continue the study of courses in banking and economics in classes of junior grade or above. Scholarship of the highest rank will not be a definite requirement for a loan-scholarship award; however, the foundation desires to encourage students who will become leaders in professional or business life and does not wish loan-scholarships granted to mediocre or inferior students." The loans are available to seniors, graduates and special students in the amount of $300 a semester for a maximum of two semesters. An interest rate of 2 per cent will apply, with repayments and interest beginning the second January 1 following graduation.

College of Commerce Student Loan Fund. This fund, established in 1957, is for small loans of short-term nature, and only for students in the College of Commerce. Loans must not exceed $75 and will not be made for terms longer than 90 days. No interest is charged.

Sterling Enterprises Foundation, Incorporated, Scholarship Loan Fund. This consists of a grant of $5,000 to provide 10 scholarship-loans of $500 each ($250 per semester) to students in the College of Commerce and the College of Engineering. Preference shall be given: (1) children or dependents of Sterling Enterprises employees; (2) residents of Monongalia or Preston counties; (3) any student resident of West Virginia if there are no applicants in the preferential categories. In order to qualify for continued aid, a student must maintain an average of at least 2.5. Loans are to be repaid at the rate of at least $200 per year. If payments are not made on time, then interest of 5 per cent will be added from the due date.

For Students in the School of Dentistry

Oscar W. Burdats Dental Students' Revolving Loan Fund. In 1955 friends of Oscar W. Burdats in the Wheeling area established a student loan fund for dental students at the University in recognition of Dr. Burdats' outstanding leadership in the dental profession for more than 60 years. The fund will be used for loans to worthy dental students who are residents of West Virginia.

Dental School Student Loan Fund. The first contribution to this fund was made by the Woman's Auxiliary of the West Virginia State Dental Society, in the amount of $400. Undergraduate students of programs under the Dental School Administration will be eligible to receive loans.

The W. K. Kellogg Foundation Dental Students' Loan Fund. This Foundation in September 1958 allotted $15,000 to the University for loans to undergraduate dental students in good academic standing who otherwise might not be financially able to continue their education.

For Students in the College of Education

Teachers Training Scholarship Loan Fund. In 1957 the State Legislature created the West Virginia Scholarship Loan Fund for teacher trainees for public purpose of relieving the teacher shortage in schools. In each county there is a selection committee comprised of the County Superintendent of Schools (Chairman) and the Board of Education. Annually, by the first day of May, each county committee shall select and recommend to the State Superintendent of Free Schools for appointment from that county their quota of graduates who are interested in teaching. Each person selected shall rank in the upper third of the members of his or her graduating class, and be a bona fide resident of the county from which selected. Each scholarship loan carries a stipend of $500 for a school year.

For Students in the College of Engineering

Eta Kappa Nu Loan Fund. This fund is available to engineering students in good standing. All loans are subject to the conditions specified by the By-Laws of Eta Kappa Nu; namely, that loans must be approved by a committee consisting of members of Eta Kappa Nu, and that loans are interest free until four months after the student leaves the University.

Charles B. Seibert Memorial Loan Fund. This loan fund was established as a memorial to the late Charles B. Seibert, former professor of electrical engineering at the University. Loans are to be made on a short term basis to students majoring in electrical engineering.

Sterling Enterprises Foundation, Incorporated, Scholarship Loan Fund. This consists of a grant of $5,000 to provide 10 scholarship-loans of $500 each ($250 per semester) to students in the College of Engineering and the College of Commerce. Preference shall be given: (1) children or dependents of Sterling Enterprises employees; (2) resident of Monongalia or Preston counties; (3) any student resident of West Virginia if there are no applicants in the preferential categories. In order to qualify for continued aid, a student must maintain an average of at least 2.5. Loans are to be repaid at the rate of at least $200 per year. If payments are not made on time, then interest of 5 per cent will be added from the due date.

For Students in the School of Journalism

Robert H. Pritchard Journalism Loan Fund. In 1952 Dr. and Mrs. Frank V. Rueckl of Winnemucca, Nev., established a loan fund in memory of Mrs. Rueckl's father, Robert R. Pritchard, a former member of the West Virginia University Board of Governors and prominent newspaper owner and editor in Weston. This fund of $1,000 is open to use by journalism students who are residents of West Virginia. Loans up to $100 per year may be obtained by a student over four years.

P. I. Reed Journalism Alumni Loan Fund. This fund was started in 1949 by members of the journalism class of 1940 to provide small emergency loans to students majoring in journalism. The fund was raised through contributions of journalism alumni of various classes and named in honor of Professor P. I. Reed, former director of the School of Journalism since it was formed in 1939, and formerly chairman of the Department of Journalism. Loans are to be repaid in one to three months.

For Students in the College of Law

The John W. Davis Fund. This fund was established for the making of loans to outstanding law students, and aids worthy students each year.

For Students in the School of Medicine

Academy of General Practice Memorial Loan Fund. This fund was established by the West Virginia Chapter of the American Academy of General Practice as a memorial loan fund to honor deceased members of the Academy. Only students regularly enrolled in the School of Medicine may apply for emergency loans from this fund. Loans are limited to $200 per year and $500 total to one individual.

Fayette County Medical Society Student Loan Fund. This fund was established March 30, 1960 by the Fayette County Medical Society with an initial gift of $2,300. Loans are available to sophomore, junior, and senior students of the School of Medicine. Loans are limited to $500 per year per student. First preferences will be given to students from Fayette County, and third- and fourth-year students.

John B. Finley Fund. A fund of $1,000 was contributed by the trustees of the estate of John B. Finley of Pittsburgh, in accordance with his will, to be used to make loans to deserving students in the School of Medicine.

The General Loan Fund for Medical Students. This fund was established in 1958 for the general aid of needy and deserving medical students.

The Kellogg Foundation Fund. The Kellogg Foundation in 1942 allotted $5,000 to the University for loans to students of medicine. Loans may not exceed $500 per year. Interest is charged at the rate of 2 per cent. Students may not borrow until after successful completion of one term in the School of Medicine.

Howard T. Phillips Loan Fund. The late Dr. H. T. Phillips of Wheeling set aside in his will a grant of approximately $1,000 for loans to medical students at the University. Dr. Phillips stipulated that loans from this fund should be made to "students who are deserving as well as needy and who are enrolled in the School of Medicine."

Thomas E. Pyles Memorial Loan Fund. This fund was established in 1958 in memory of Thomas E. Pyles, who died during his first year in the School of Medicine. The fund is used for short-term emergency loans.

Dr. E. J. Van Liere Medical Student Loan Fund. This fund was established September 7, 1960 with an initial gift of $10,000, sponsored by the Alumni Association of the School of Medicine and given through the West Virginia University Foundation, Inc. It is to be used for the support of students regularly enrolled in the School of Medicine, and is planned for meeting long-term needs, rather than as an emergency fund. Loans are limited to $600 for one academic year, and $2,400 during the entire course of study.

Van Liere Medical Technology Loan Fund. This fund was established in honor of Dr. E. J. Van Liere, Dean Emeritus of the School of Medicine. Loans are made to students majoring in Medical Technology.

William Morgan Winkler Loan Fund. This fund was established by Dr. H. J. Winkler, L'Anse, Michigan, in honor of his son, William Morgan Winkler. Loans are made available from this fund to medical students who have successfully completed at least one full semester of professional work. Loans are limited to $400 for one academic year and to no more than $1,000 during the student's medical school career

For Students in the Division of Military Science and Air Science

R.O.T.C. Loan Fund. This loan fund, which honors the late Col. Samuel B. Roth, professor of military science and tactics from 1950 to 1953, was established in 1956 by a $200 gift from an anonymous donor. It is to be used to make small emergency loans to students in Advanced Army and Air Force ROTC.

For Students in the School of Mines

Central West Virginia Coal Mining Institute Scholarship Loan Fund. This fund provides annually two scholarship loans of $700 per year each. The loans are renewable from year to year, and are repayable on a scheduled basis after graduation.

The John M. Crawford and David B. Crawford Loan Fund. In 1951 the Parkersburg Rig and Reel Company established the John M. Crawford and David B. Crawford Loan Fund with an initial gift of $5,000 to assist accredited students seeking a degree in engineering or geology and who have financial need. Loans are available to students who are graduates of West Virginia high schools, and seeking a degree in engineering (preferably petroleum engineering) or geology.

Monongahela Valley Coal Mining Institute Loan Fund. The Institute in 1952 established a loan fund of $1,500 to aid worthy students in the field of coal mining

engineering who are residents of Monongalia County. Loans may be made to students beyond their first semester in mining engineering on a short-time basis without interest.

New River and Winding Gulf Mining Institute Scholarship Loan Fund. In February, 1961, the New River and Winding Gulf Mining Institute established a scholarship loan fund of $4,400 to aid deserving students from Raleigh and Fayette counties, West Virginia, enrolled in the mining engineering curriculum of the School of Mines. Scholarship loans may be made to freshmen, upperclassmen, and graduate students.

G. Ralph Spindler Loan Fund. This fund was established in memory of G. Ralph Spindler, late Dean of the School of Mines. Loans are available to junior, senior, and graduate students in the School of Mines. Applicants must have at least a 2.0 over-all academic average.

Fred G. and Nannie D. Wood Loan Fund. In 1949 this fund was created by an initial gift of $1,000 from the late Fred G. Wood, a former Raleigh County coal operator. The provisions state that loans shall be made to assist students to receive training in the engineering of coal mines, and that "preference shall be given to students from families engaged in coal mining, or who have grown up in coal mining communities."

Fred G. Wood and Nannie D. Wood Loan Fund No. 2—(Mine Electricians, Raleigh County.) This fund was started June 1, 1951 by the late Fred G. Wood with an initial gift of $600, supplemented by one-third of the rental of properties given to the University by Mr. and Mrs. Wood, and is intended to be used by students in the field of mining who are pursuing courses to train them for the supervision and maintenance of electrical equipment used in coal mines. Preference is to be given to students from Raleigh County.

For Students in the School of Music

Weldon Hart Memorial Loan Fund. In 1957 a memorial loan fund was established by friends of Weldon Hart, former director of the School of Music. The emergency fund is available to students enrolled in the School of Music.

For Students in the School of Nursing

C. Jeanette Oswald Loan Fund. This fund was established by a bequest from C. Jeanette Oswald who for many years was in charge of the nursing education curriculum at the University. Loans from this fund are to be made to students seeking degrees from the West Virginia University School of Nursing.

For Students in the School of Pharmacy

Alfred Walker Fund. This is a special fund for loans to pharmacy students, established in 1938 by former Dean J. Lester Hayman in honor of the memory of Alfred Walker of Sutton, first president of the West Virginia Pharmaceutical Association, and for many years secretary of the association.

For Students in Any College or School of the University

Anne Bailey Chapter of the Daughters of the American Revolution Student Loan Fund. This fund was established by the Anne Bailey Chapter of the Daughters of the American Revolution for the purpose of helping worthy and needy students. Students must have at least a 2.0 academic average to be eligible for a loan from the fund. Loans vary in amount from $10 to $250.

Claude Worthington Benedum Scholarship Loan Fund. The Claude Worthington Benedum Foundation in 1952 established this fund with an original gift of $5,000. Additional gifts have been made to the fund from time to time. Deserving students from West Virginia who are in need of financial assistance to complete their educations are eligible for aid.

The Chauncey Watson Boucher Fund. This fund was established in 1936 by former President C. S. Boucher in memory of his father. Seniors from West Virginia may borrow only for the payment of University fees. Loans must be repaid within two years and are interest free.

Campus Club Loan Fund for Women. Beginning in 1918 the Campus Club established an emergency loan fund for the aid of women enrolled in the University. Small loans for emergency needs are made to women students.

Chimes Loan Fund for Women. Chimes, junior women's honorary, in 1956 established a loan fund for the aid of women students. Loans shall be no less than $10 nor more than $100 and shall be paid in full within the school term. There is no interest charged, but a small contribution is in order for the purpose of maintaining the fund.

Elizabeth McAllister Crawford and John McLenaghen Crawford Fund. The Consolidated Natural Gas System Educational Foundation in 1950 established this fund with an initial gift of $10,000. Its purpose is to assist students who are without other resources from which their educational needs may be met. To be eligible for this aid, a student must be a graduate of a West Virginia high school, enrolled in a course leading to a degree, and must have completed at least the first semester of the freshman year.

Faculty Emergency Loan Fund. This fund was established in 1954 by an initial gift of $1,000 from A. W. Ramsey of the Tidy House Products Company of Shenandoah, Iowa. Mr. Ramsey, president of the company and a University graduate, established the fund to provide small emergency loans for faculty members at a minimum cost.

Wade Hampton and Hessie Kirk Hampton Memorial Emergency Loan Fund. This fund was established in 1957 by the six children of Wade Hampton and Hessie Kirk Hampton, and is designed to aid in the form of emergency loans any student who is a citizen of the United States. If applicants are numerous, preference is to be given students whose parents are coal miners or are employees in a coal mine.

Charles E. Lawall Fund. This was established in 1939 for small loans to worthy students, and is available to students whose scholastic record has been satisfactory. Interest is payable only for periods in excess of the time for which the loan is granted.

Leon Leonian Memorial Fund. This fund was established in 1945 for small loans to students for short periods without interest. It honors the memory of Dr. Leon Leonian, a former University staff member.

National Defense Student Loan Fund. Congress on August 23, 1958 passed the National Defense Education Act. The Act provides for the creation of a University loan fund from which needy undergraduate and graduate students may borrow on reasonable terms for the purpose of completing their higher education. Special consideration in the selection of loan recipients shall be given to students with a superior academic background who express a desire to teach in elementary or secondary schools, and whose academic background indicates a superior capacity or preparation in science, mathematics, engineering, or a modern foreign language.

C. R. Orton Memorial Loan Fund. This fund, established in 1955, honors the memory of Clayton R. Orton, former dean of the College of Agriculture, Forestry, and Home Economics. It is available for small emergency loans to any University student.

Raleigh County Alumni Association Loan Fund. This association established a loan fund in 1953 for the aid of students enrolled from Raleigh County. Any regularly enrolled student who has permanent residence in Raleigh County may procure aid from the fund when it is available.

Revolving Emergency Loan Fund. This fund to meet emergencies of University students was established in 1931. The principal amounts to about $5,000. Loans are of small amounts and are made for short periods of time only.

Helen Sterrett Jones Memorial Loan Fund. This fund of $1,000, established in September, 1959, honors Helen Sterrett Jones, the late wife of Edwin Channing Jones, professor and chairman of electrical engineering at the University. It was established by former colleagues in Y.W.C.A. and Mortar Board, in which Mrs. Jones was actively interested. Loans are available to deserving women students who show both need and normal academic progress.

The Ira Errett Rodgers 1928 *Football Team Emergency Loan Fund.* This fund was established October, 1959, by the 1928 West Virginia University Football Team members in honor of their coach, Ira Errett Rodgers. This fund is designed to meet emergency needs of the members of the varsity football squad. Loans are to be of small amounts and made for short periods of time only.

Senior Class Loan Fund. A gift of $100 was given by the 1949 senior class to be used for aid to seniors in the University needing financial assistance. The class of 1950 made an additional gift of $100. Small loans are made without interest.

Service Clubs Loan Fund of West Virginia University, Incorporated. The West Virginia Kiwanis District in 1950 established a non-restricted loan fund for needy University students; and more recently other service clubs also have made donations. This fund is available to any student who is in good standing and is in need of financial help. It is operated on a non-profit basis.

Theodore Smith Fund. In 1930 Theodore Smith, a University student, was drowned. His death disclosed the fact that he was being financed through the University by the late James E. Jones. He had taken out a life insurance policy of $2,000 with Mr. Jones as beneficiary. In deference to the memory of Theodore Smith, Mr. Jones turned the $2,000 over to the University for the establishment of this fund.

Stewart Student Loan Fund. This fund was established in 1958 by the faculty and staff of the University to commemorate Irvin Stewart's 12 years as president of the University. Loans for essential expenses are available to any worthy and needy student. No interest is charged while the student is enrolled, nor for six months thereafter. An interest rate of 3 per cent per year will apply thereafter.

P. C. Thomas Fund. This fund was established in 1943 in memory of the late P. C. Thomas of the Koppers Coal Company. The initial contribution made by the employees of the company was $520.

Part II

ADMISSIONS, FEES, AND REGULATIONS

Admission To Undergraduate Colleges and Schools

Candidates for admission to the University may be admitted either by examination or on the basis of official transcript of record. Residents of West Virginia, applying for admission on the basis of graduation from a preparatory school with a minimum of 15 units of high school work acceptable to the University, may be admitted by satisfying one of the following requirements:

1. Presenting a minimum average of "C".
2. Ranking in the upper three-quarters of the graduating class.
3. Qualifying for admission to the University on the basis of testing and/or interview.
4. Satisfying probation requirements after being required to enroll for a try-out period during a preceding summer session.

The American College Testing Program (ACT) is recommended for admission and required for scholarships, placement, and counseling. Students interested in applying for admission to the University should contact their high school early in their senior year for information with regard to ACT. Students who have not taken ACT prior to their coming to the University will be required to take the tests after they arrive on campus.

The various colleges, schools, divisions, and departments of the University may establish additional admission requirements. Transcripts of secondary school record must be received at least three weeks prior to the beginning of the term or semester in which the applicant is interested. The transcripts become the property of the University and are permanently filed in the Office of the Registrar.

In accrediting West Virginia secondary schools, the University follows the classification made by the State Department of Education. Priority will be given to products of secondary schools accredited by the North Central Association of Colleges and Secondary Schools. Applicants who do not have transcripts showing graduation from accredited schools or from colleges or universities previously attended, may be permitted to register provisionally, at the discretion of the Committee on Admissions. If satisfactory transcripts cannot be obtained, the registration will be canceled and the fees returned in accordance with the refund schedule. A provisional registration ordinarily will not be continued for more than a week.

Students who are admitted conditionally must make up all deficiencies before they can be classified as sophomores.

ENTRANCE UNIT DEFINED

Requirements for admission to colleges, schools, and divisions of the University are stated in terms of units.

A unit in any subject represents the amount of work that may be done in a standard high school in a year of thirty-six weeks, with five recitation periods per week, of no less than forty minutes each. In courses in which laboratory work is required, from two to three periods of laboratory work are considered the equivalent of one period of recitation according to the amount of outside preparation required in connection with such work.

Graduates of accredited schools may receive credit for work certified with the understanding, however, that no student may enter any college, school or division until he has credit for 15 units, i.e., the work of the standard four-year college preparatory course.

PRESCRIBED AND ELECTIVE UNITS

A. Graduation from high school and fifteen units of high-school work acceptable to the University are required for admission.

B. The following groups are required:
(1) Four units in English[1]
(2) Three units in a second subject
(3) Two units in each of two other subjects

C. The work in "A" must include the following:

For admission to all colleges and schools, 1 unit in elementary algebra.

For admission to the College of Agriculture, in the case of students who elect agriculture or forestry as their major field of study—1 unit in elementary algebra and 1 unit of plane geometry.

For admission to the College of Arts and Sciences, in the case of students who intend to elect chemistry, geology, mathematics, physics, predental. premedical, or premedical technology studies as their major field of study—1 unit of elementary algebra and 1 unit of plane geometry.

For admission to the College of Engineering or the School of Mines, prospective students must be qualified for admission to the University, present credit for 2 units of algebra and 1 unit of geometry (1 unit plane geometry or 1 unit integrated geometry or ½ unit solid geometry).

Students having two units of algebra may take an entrance examination in Math. 3, College Algebra, and by passing this examination be excused from Math. 3. Freshmen entering the College of Engineering with ½ unit of trigonometry in addition to the above required units may take an entrance examination in Math. 4, Trigonometry. Students passing this examination will be excused from Math 4.

Until September 1, 1963 students will also be admitted to the College of Engineering and the School of Mines with 1½ units of algebra, 1 unit of plane geometry, and ½ unit of solid geometry.

D. Work in the following subjects not to exceed the number of units placed after each subject will be accepted:

Subject	*Units*
English	4
Speech	1
Journalism	1
Foreign Languages[2]	
French	3
German	3
Greek	3
Italian	3
Latin	4
Spanish	3
Mathematics	
General	1
Algebra	2
Plane Geometry	1
Solid Geometry	½
Trigonometry	½
Drawing	
Free-hand drawing	1
Mechanical drawing	1
Aeronautics	1
Art	1
Education	2
Music	2
Health	1
Physical Education	1

Subject	*Units*
Science[3]	
Botany[4]	1
Biology[4]	1
Chemistry	1
General Science	1
Geology	1
Physical geography	1
Physics	1
Physiology	½
Zoology[4]	1
Social Studies[5]	3
History	3
Social Studies	3
Vocational Subjects (not to exceed five units)	
Agriculture	4
Home Economics	3
Industrial training	3
Bookkeeping, or bookkeeping and commercial arithmetic	2
Commercial arithmetic (alone)	½
Commercial law	½
Shorthand	2
Typing	1

ADVANCED STANDING EXAMINATION

Application for advanced standing on work of college grade for which college credit cannot be established on the basis of official transcript of record should be made to the Registrar of the University not later than two weeks after the applicant's matriculation. Upon payment of the proper fee the Registrar will issue an examination permit. After examination, the department will report to the Registrar the University courses, if any, which the applicant is entitled to credit.

PHYSICAL EDUCATION GENERAL PROGRAM

All students entering the University with less than 58 semester hours of college credit are required to complete certain courses in physical education, unless previous credit is allowed. All men students take two hours of physical education courses, Phys. Educ. 1 and 2, during their first year of residence. All women students take four hours of physical education courses, selected with the adviser's approval from Phys. Educ. 3-25, during their first two year's of residence. Upper-division women students who wish to elect a physical education course or who have not completed the physical education requirements should select Phys. Educ. 101 or Phys. Educ. 102.

The University Health Service will determine whether students are physically qualified for required physical education courses, and for active participation in other University activities.

VETERANS

The University recognizes that men and women from the Armed Forces who enter college require individual and personalized guidance in order to facilitate their entrance and to aid their adjustment to University life. The Veterans' Coordinator is available for consultation and help in the solution of personal problems which may arise in the transition to civilian student life.

Information regarding educational opportunities made possible at the University through provisions of the Service Men's Readjustment Act of 1944 (G.I. Bill of Rights), Public Law 550, and the Vocational Rehabilitation Program of the Veterans Administration (Public Law 16), and the War Orphan's Educational Assistance Act of 1956 (Public Law 634) may be obtained from the Veterans' Coordinator by personal conference or by mail.

An honorably discharged veteran of the armed forces of the United States with a minimum of one year active duty shall be exempted from any additional work in Basic Military and in the Physical Education general program on submission of due proof thereof to the Registrar. Students with six months but less than one year service are exempted from taking the first year of Basic Military. Scholastic hours credit will be allowed for military training for which a student is exempted.

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[1]A student may enter the University with 3 units in English and satisfy admission requirements by making a satisfactory grade on the American College Testing Program English test, or by successfully completing English 1.

In the College of Engineering, the School of Mines, and the Department of Agricultural Engineering, a student may enter with only 3 units in English if he also presents for entrance 2 units in one foreign language.

[2]One unit of Latin will be accepted. No less than 2 units of either French, German, Greek, Italian, or Spanish will be accepted unless sufficient additional work in that language is taken in college to complete a minimum of 2 units.

[3]A group of 2 or 3 units in science may be made by combining 1 unit each of any two or three of the following: biology, botany, chemistry, geology, physics, and zoology.

[4]If a student presents 1 unit in biology for admission, he may have credit for no more than ½ unit in either botany or zoology.

[5]A group of 3 units may be formed by combining 2 units of history with 1 unit of social studies, or by combining 1 unit of history with 2 units of social studies.

DIVISION OF MILITARY SCIENCE AND AIR SCIENCE

Requirements

West Virginia University, a beneficiary of the Act of Congress of 1862, offers in time of peace four-year courses of instruction in Military Science and Air Science. Normally successful completion of one of these courses and degree requirements leads to a commission as Second Lieutenant in the United States Army Reserve, or the United States Air Force Reserve. Distinguished Military Graduates of West Virginia University may apply for and be offered commissions as second lieutenants in the Regular Army or the Regular Air Force, under conditions prescribed by law.

The course comprises two years of basic training (Military Science 1, 2, 3, and 4, or Air Science 1, 2, 3, and 4), two years of advanced training (Military Science 105, 106, 107, 108, or Air Science 105, 106, 107, and 108), and summer camp for six weeks' duration for Military Science students and four weeks' summer training for Air Science students during the summer following the junior year. The Army summer camp and Air Force summer training is conducted at government expense, and eligible students are paid approximately $75.00 monthly in addition to traveling expenses at the rate of 5 cents per mile.

All male students not specifically exempt by provisions of the appropriate paragraph below are required by Chapter 18, Article 11, of the official Code of West Virginia, and by orders of the Board of Governors of the University, to complete satisfactorily the entire basic course as prerequisite to graduation from the University.

Within deferment quotas established by Public Law 758, 80th Congress, qualified and selected enrolled students are offered the opportunity of being deferred by the Professor of Military Science or the Professor of Air Science from military service under the Selective Service Act of 1948 and Selective Service Extension Act of 1950, as amended by the Universal Military Training and Service Act, November, 1951, as amended, until completion of their military courses and receipt of their Baccalaureate Degree. Such deferment is subject to cancellation should the student not be selected for the advanced course, fail to remain in good standing, or fail to develop the qualities expected of an officer.

Curriculum

Basic Course: Instruction is given for three hours per week throughout the four semesters of the freshman and sophomore years. Included in the instruction are noon formations during the fall and spring months, Monday, Wednesday, and Friday for military science students, and Tuesday and Thursday for air science students. Two hours' credit is allowed for each semester's work.

Advanced Course: The third and fourth years of instruction in Military Science or Air Science comprise the Advanced Course and correspond to the junior and senior years of the student's academic course. Entrance into the advanced course is elective on the part of the student and selective on the part of the services. Selection is based on the student's record and on service regulations and is limited in total numbers of yearly quotas. Application for the advanced course should be made at the beginning of the second semester of the student's sophomore year. A grade-point average of 2.0000 is one of the prerequisites for enrollment in the advanced programs.

Each student who is enrolled in the advanced course agrees to complete the course including the summer camp and, if tendered, accept a commission in a reserve component as prerequisites for his graduation from the University unless excused by proper authority.

Air Science advanced course students may be permitted to substitute University courses in the general field of political science for portions of the senior air science curriculum.

Senior Air Science students enrolled in Category I (Pilot) are required to participate in the Flight Instruction Program. This program consists of 35 hours of ground instruction and 36½ hours of dual and solo flight instruction for the private pilot's license. The 35 hours of ground instruction is included in the junior and senior curriculum. There is no additional fee for this program.

Courses of instruction are listed in Part III.

Allowances

The advanced Army and Air Science student is paid a commutation of subsistence allowance of approximately 90c per day or $27.00 per month. The Army ROTC student is paid monthly and the Air Science Advanced cadet is paid quarterly. In addition, uniforms, equipment, and military or air science textbooks are issued to all military or air science students.

Military Deposit

Each student is financially responsible for all government property he is issued. A deposit of $20 will be given to the Comptroller at time of registration to cover any loss or damage to Government property while in his possession. The deposit, less a nominal administrative charge, will be refunded upon return of the undamaged property.

Exemptions

The following students will not be required to enroll in the Division of Military Science and Air Science, but may elect to do so with the approval of the Professor of Military Science or the Professor of Air Science.

(1) Those who are not citizens of the United States.
(2) Graduate students.
(3) Students who are taking only short courses, the special interim courses, or extension work.
(4) Transfer students who at the time of matriculation have established 58 semester hours with the Registrar of the University.
(5) Students who have successfully completed the two-year basic Army, Navy, or Air Force ROTC course at any institution maintaining a Senior Division unit. Those who have satisfactorily completed one, two, three, or four semesters of ROTC training in a senior division will be allowed comparable hours credit and exemption from comparable military training.
(7) Students who are unable to perform military duty for physical reasons.

Students who have had previous training, other than in a senior division ROTC unit, will be allowed exemption from military training as determined by the Professor of Military Science, or the Professor of Air Science, and the Registrar. No credit will be given in Air Science for Junior Division ROTC. Scholastic hours credit will be allowed for military training for which a student is exempted. Students applying for entrance who have had previous ROTC training should request the institution where such training was received to submit the pertinent ROTC student's records to the University, prior to the date of registration.

Students with more than one year of previous honorable active service in one of the armed forces are exempted from taking basic military training (i.e., Military or Air Science 1, 2, 3, 4). Students with six months but less than one year's active service are exempted from taking the first year of the basic course. Scholastic hours credit will be allowed for military training for which a student is exempted. See Courses of Instruction (Part III) for Military Science and Air Science.

Exemptions will be determined by the Director of the Student Health Service (physical exemptions), and the Professor of Military Science or the Professor of Air Science, who will notify the Registrar and the student's adviser.

Organization

The Division of Military Science and Air Science and the conduct of military science and air science instruction is the responsibility of the Professor of Military Science and the Professor of Air Science, who together with their military staffs, are officers and non-commissioned officers of the U.S. Army and the U.S. Air Force on duty at West Virginia University.

Reserve Officers Training Corps Bands

There is an Army ROTC Band and an Air Force ROTC Band. Membership is restricted respectively to basic Army and Air Force ROTC students. Assignment to one of the bands is determined by audition before the Director of the Band.

SPECIAL STUDENTS

Persons who do not desire to become candidates for a degree may, by permission of the Committee on Admissions, be admitted as special students, subject to the following provisions:

1. Special students must be twenty-one years of age or veterans of the armed forces.
2. Special students must satisfy at least 9 units of the requirements for admission, including 2 units of English.
3. Every application for admission as a special student must be presented to the Committee on Admissions and must set forth fully the applicant's reason, together with a detailed statement of studies he desires to pursue.
4. Special students are subject in all respects to the usual rules relating to registration and scholarship. They may be assigned to classes for which they apply, it being understood, however, that admission to any class rests entirely with the instructor in charge, and further, that admission to any class when so granted does not necessarily imply credit for prerequisites.

CREDIT ACCEPTED FROM A JUNIOR COLLEGE

The maximum credit accepted from a junior college accredited by the North Central Association of Colleges and Secondary Schools or other regional accrediting association will not exceed seventy-two (72) semester hours, and credit will be allowed for lower-division courses only. No credit will be allowed for courses completed in a junior college subsequent to attainment of junior or higher rank by the student at the University.

ADMISSION TO THE GRADUATE SCHOOL

Applicants holding baccalaureate degrees from West Virginia University or from other accredited institutions may be admitted to the Graduate School. Applications for admission must be filed with the Registrar of the University, who will keep a copy and forward the original applications to the Dean of the Graduate School. The applicant must request the registrar of the college or school previously attended to send an official transcript directly to the Registrar. The applications and transcript should be received by the Registrar at least one month in advance of registration days. Application forms may be obtained from the Registrar.

Admission to the Graduate School does not constitute acceptance of the student by the major department of his choice. It merely grants the student permission to seek admission to the department. It is the responsibility of the student to make this contact at once to determine if he will be accepted by the department.

Undergraduate deficiencies, generally unsatisfactory background, or lack of adequate facilities in a given department may prevent acceptance by the department. In such instances, the student either must seek acceptance by another department or register as a "special" student. A "special" student is not a candidate for an advanced degree.

The Dean of the Graduate School and the Chairman of the department in which the student desires to do his major work will advise him concerning departmental prerequisites for admission, candidacy for an advanced degree, and major and minor advanced degree requirements.

Eligible students who wish to further their education without reference to higher degrees may be admitted to the Graduate School and may elect courses for which they can satisfy the prerequisites.

Complete information is available in the *Announcements* of the Graduate School.

Graduate Degrees

Graduate degrees offered by departments in the University which have been approved for graduate work are:

Master of Agriculture (M.Agr.)
Master of Arts (A.M.)
Master of Arts in Library Science (M.A.L.S.)
Master of Business Administration (M.B.A.)
Master of Home Economics (M.H.E.)
Master of Music (Mus.M.)
Master of Science (M.S.)
Master of Science in Engineering (M.S.Eng'g.)
Master of Science in Aero-Space Engineering (M.S. A-S E.)
Master of Science in Agricultural Engineering (M.S.Agr.E.)
Master of Science in Chemical Engineering (M.S.Ch.E.)
Master of Science in Civil Engineering (M.S.C.E.)
Master of Science in Electrical Engineering (M.S.E.E.)
Master of Science in Engineering of Mines (M.S.E.M.)
Master of Science in Home Economics (M.S.H.E.)
Master of Science in Home Economics Education (M.S.H.E.Ed.)
Master of Science in Industrial Engineering (M.S.I.E.)
Master of Science in Journalism (M.S.J.)
Master of Science in Mechanical Engineering (M.S.M.E.)
Master of Science in Theoretical and Applied Mechanics (M.S.T.A.M.)
Master of Science in Nuclear Engineering (M.S.N.E.)
Master of Social Work (M.Soc.Wk.)
Doctor of Philosophy (Ph.D.)
Doctor of Education (Ed.D.)

Professional Degrees

The following professional degrees are conferred upon graduates of the College of Engineering and the School of Mines on the basis of practical experience and study in absentia, the presentation of a thesis, and an oral final examination.

Aero-Space Engineer (A-S E.)
Chemical Engineer (Ch.E.)
Civil Engineer (C.E.)
Electrical Engineer (E.E.)
Mechanical Engineer (M.E.)
Engineer of Mines (E.M.)

SPECIAL REQUIREMENTS FOR ADMISSION AND TRANSFER

General

Transcripts of college or university records must be sent by the registrar of the other institution directly to the Registrar of the University. All applicants for transfer must present an average based on all work attempted at other institutions of higher education equivalent to a West Virginia University average of "C" (2.0000) or higher. The various colleges, schools, divisions, or departments of the University may establish additional requirements for transfer.

Candidates for degrees at the University must secure written permission in advance from the Registrar of the University before registering for work in other colleges or universities to be transferred back in partial satisfaction of degree requirements here.

The College of Commerce

Applicants seeking admission to the College of Commerce for the purpose of obtaining a degree must have earned at least 58 semester hours of required and approved elective courses in the lower-division curriculum at a grade average of not less than "C."

The School of Dentistry

Applicants for admission to the School of Dentistry should write to the Assistant Registrar, Medical Center, West Virginia University, who will furnish official blanks upon which formal application must be made.

A $10 application fee is required and must accompany the application.

In order to be considered for admission to the School of Dentistry, the applicant must be a graduate of an accredited high school with fifteen units of entrance credit which shall include four units of English, one unit of elementary algebra, and one unit of plane geometry.

Applicants for admission must present evidence of having completed successfully two full academic years (60 semester or 90 quarter hours) of work in the liberal arts in an accredited college based on the completion of the prescribed four-year high school course. All science courses shall include both lecture and laboratory instruction. The college courses shall include not less than six semester hours credit each in English Composition and Rhetoric, Biology (preferably zoology), in physics, in inorganic chemistry and in organic chemistry. Credits earned in physical education and military science will not be considered.

A dental aptitude testing program is sponsored by the Council on Dental Education of the American Dental Association and approved by the American Association of Dental Schools. Applicants for admission to the School of Dentistry are required to take the aptitude tests and to submit the resulting scores. The scores achieved on these tests will be considered as a factor in the selection of students. The tests may be taken in any one of the forty-six dental schools, or any one of the forty testing centers set up in colleges and universities throughout the United States. Information concerning the places, and the dates on which the tests will be given, may be obtained from the Secretary of the Council on Dental Education, c/o American Dental Association, 222 East Superior Street, Chicago 11, Illinois.

A personal interview with the Committee on Admissions is required. Interviews will be at the Medical Center, West Virginia University, and will be arranged as far as possible, to suit the convenience of the applicant.

Good physical and mental health are essential for the successful study and practice of dentistry. Good eyesight is particularly important. The applicant who is admitted to the School of Dentistry must present on or before the day of enrollment, a certificate from his opthalmologist stating the condition of his eyes, and if any correctible defects in vision exist he shall present evidence that proper corrections have been made.

A deposit fee of fifty dollars is required when the applicant accepts offer of admission. This amount will be applied as part-payment of tuition fee when the applicant registers for the first semester. The deposit will be forfeited if the applicant fails to register.

Division of Dental Hygiene. The dental hygiene program is a division of the School of Dentistry. Its curriculum offers a four-year degree program for dental hygienists. Upon the fulfillment of all prescribed requirements and with the recommendation of the School of Dentistry, the candidate shall be awarded the degree, Bachelor of Science in Dental Hygiene. The general admission policies established by the West Virginia University shall be met. The applicant must be a graduate of an accredited high school or preparatory school which is acceptable for college entrance. One unit in both algebra and plane geometry will be necessary for admission. The Dental Hygiene Aptitude Test will be required of every applicant.

Further details concerning requirements of the School of Dentistry may be obtained by writing to the Assistant Registrar, Medical Center.

The College of Education

Requirements for admission to the College of Education shall be the completion of 58 semester hours of approved college work, with an average of at least 2 grade points per credit hour on all work attempted. Candidates for a Bachelor's Degree in Education register for their first two years of work in the College of Arts and Sciences. Freshmen and sophomores who expect to enter the College of Education will indicate

their intention when they register. Their studies will be directed by advisers for pre-education students. Such students should so arrange their courses of study as to satisfy requirements for junior standing and should be fulfilling requirements for the certification of teachers.

The College of Engineering and the School of Mines

For admission to the College of Engineering or the School of Mines, prospective students must be qualified for admission to the University, and present credit for 2 units of algebra and 1 unit of geometry (1 unit plane geometry, or 1 unit integrated geometry, or ½ unit plane geometry and ½ unit solid geometry.)

Students having two units of algebra may take an entrance examination in Math. 3, College Algebra, and by passing this examination may be excused from Math. 3. Freshmen entering the College of Engineering with ½ unit of trigonometry in addition to the above required units may take an entrance examination in Math. 4, Trigonometry. Students passing this examination will be excused from Math. 4.

Until September 1, 1963, students will also be admitted to the College of Engineering or the School of Mines with 1½ units of algebra, 1 unit of plane geometry, and ½ unit of solid geometry.

Students desiring to transfer from another college, school, or university into the College of Engineering or the School of Mines must meet the following requirements:

(A). Have a grade-point average of 2.0000 or higher for all college level courses (English 0, Math. 0, Math. 1, Math. 2, and Math. 7 count for entrance only).

(B). Have a grade-point average of 2.0000 or higher for all mathematics courses excluding only Math. 0 and Math. 1.

The School of Journalism

A candidate seeking admission to the School of Journalism for the purpose of obtaining a degree must have satisfied requirements for admission to one of the University undergraduate colleges and must have earned at least 58 semester hours of college credit. A student deficient in the physical education service program and military science will be required to take these subjects as soon as possible. During his freshman and sophomore years he should have completed satisfactorily all or most courses specified for prejournalism majors. A prejournalism student not maintaining at least a "C" average during his first two years in all college subjects must apply directly to the School of Journalism Committee on Scholarship for admission to the School.

The College of Law

Application forms may be obtained from the Registrar. Every applicant for admission must request the proper registrars to send directly to the Registrar at least one month prior to registration a complete transcript of record in every college or university attended. Evaluation of credentials is made by the Registrar.

No applicant will be admitted who previously shall have attended another law school and who shall be ineligible to return to that school in good standing. No applicant will be admitted who has been convicted of a crime which is ground for the annulment or suspension of a license to practice law in West Virginia.

Beginning students are admitted to the College of Law only at the beginning of the First Semester (effective September 1, 1961).

All candidates for the degree of Bachelor of Laws must present a baccalaureate degree from an institution of approved standing. Any degree from such an institution will be regarded as satisfying the requirements for admission provided that, in the opinion of the Scholarship Committee of the College of Law, the degree satisfies the entrance requirements of the Association of American Law Schools.

Beyond the general requirement as to acceptable credits, the College of Law does not prescribe the courses which must be presented for admission. It is essential, however, that a student, before entering upon the study of law, should have a thorough grounding in English, particularly English composition. A student will not be graduated with the degree of Bachelor of Laws if he is markedly deficient in

the use of English; and if it appears upon his written examinations that he is seriously handicapped in this regard, he will be required to correct the deficiency before he is permitted to continue in the College of Law. A student should also have a comprehensive grounding in history, particularly American history and constitutional history, and in general, in enough of the social sciences and humanities to give him a broad informational and cultural background and to develop in him a disciplined reasoning faculty. It is desirable to include some courses in mathematics accounting, economics, and Latin. The individual needs of the student, however may well be considered and it is therefore inadvisable to lay down fixed rules.

Applicants for admission to advanced standing must satisfy the ordinary requirements of admission to the first-year class, must have successfully pursued the study of law in a school which if in the United States is a member of the Association of American Law Schools, and must have received credit for courses equivalent to those required of students in the College of Law. Such applicants must have received an average of "C" or its equivalent on all work taken at such other law school or law schools. The extent of credit allowed for work done elsewhere is determined by the Scholarship Committee. A student will not be allowed credit, however, for work carried in another law school unless the student received thereon a grade of "C" or its equivalent.

The School of Medicine

Applicants for admission to the School of Medicine should write to the Assistant Registrar, Medical Center, West Virginia University, who will furnish official blanks upon which formal application must be made.

A $10 application fee is required and must accompany the application.

In addition to high school requirements, the applicant for admission to the School of Medicine must have credit for at least three years of work in a college of recognized standing. This must include 90 semester hours of credit exclusive of military science and physical education.

The requirements outlined below may be met in either of two ways: first and preferably, by pursuing a course of study leading toward a Bachelor's Degree with major and minor fields of the applicant's own choosing; or secondly, by following a more rigidly prescribed curriculum generally offered as a "Pre-Medical" curriculum. In either case, the applicant must have completed satisfactorily the minimum requirements listed below:

English Composition and Rhetoric	1 year
Zoology or Biology (with laboratory)	1 year
Inorganic Chemistry (with laboratory)	1 year
Organic Chemistry (with laboratory)	1 year
Physics (with laboratory)	1 year
Social Studies	1 year

A total of 90 semester hours of work exclusive of military or air science and physical education is required.

The number of students the medical school can accommodate is strictly limited. Applications for admission are considered by the Committee on Admission of the School of Medicine, which selects those with the highest qualifications of scholarship and personal fitness. An important factor is the score of the applicant in the Medical College Admissions Test sponsored by the Association of American Medical Colleges and given at suitable times. Students should consult premedical advisers about this test or should write to Educational Testing Service, P. O. Box 592, Princeton, New Jersey. Applications for admission may be made as much as a year in advance of the opening date.

Each applicant is expected to deposit $50 before his name is entered upon the official list of those accepted to the School of Medicine. If the applicant enrolls, this sum is applied to the tuition of the first semester. If the application is withdrawn after the applicant has been offered a place and has made a deposit, such deposit may be refunded at any time prior to May 15 of the year in which enrollment is anticipated.

Admission Requirements for Medical Technology. Admission requirements for the first year (pre-medical technology) are those for the College of Arts and Sciences, namely, 15 units of high school work including subjects specified in the *Announcements* of the College of Arts and Sciences. Mathematics, chemistry, and physics are very desirable.

Admission to the third year (Medical Technology 1) is based upon two years of collegiate work with a total of 67 hours, exclusive of military science, as follows:

English. 12 semester hours. (Must include 6 hours composition and rhetoric and 6 additional hours in literature.)

Biological Science. 8 hours. (General Zoology or General Biology are acceptable.)

Chemistry. 16 hours. (Inorganic Chemistry, 8 hours; Quantitative Analysis, 4 hours; Organic Chemistry, 4 hours.)*

Physics. 8 hours.

Physical Education. 4 hours for women, 2 hours for men. (University requirements for students taking first two years in residence.)

Algebra. 3 hours.

Electives to complete the required hours. Electives should be in the fields not covered in the required subjects. Courses such as bacteriology, parasitology and comparative anatomy should not be taken until after the completion of the sophomore year. A foreign language is recommended for students who plan to do graduate work.

Further details concerning admission requirements of the School of Medicine or the Division of Medical Technology may be obtained by writing to the Assistant Registrar, Medical Center.

*It is recommended that, if possible, the 8-hour course in Organic Chemistry be taken.

The School of Music

Students who meet University entrance requirements are admitted to the School of Music provided they pass the freshman music talent tests to the satisfaction of the examining committee, and meet the Applied Music entrance requirements as set forth in the published *Announcements* of the School of Music. All students will be examined at least twice a year, in January and in May, to determine the progress made.

Students transferring to the School of Music from other colleges and schools will be required to present a minimum average of 2.0. Exceptions may be made in the case of first-semester freshmen.

In the School of Music special provision may be made to permit talented individuals to take work in Applied Music without credit.

Advanced standing in applied music is given only by examination. Persons desiring such standing should enroll at the beginning of the semester, and after they have become thoroughly familiar with the requirements for each semester's work, they may apply to the Registrar for a special examination in which they may prove their ability to meet the requirements as outlined.

The School of Nursing

Applicants for admission to the School of Nursing should write to the Assistant Registrar, Medical Center, West Virginia University, who will furnish official blanks upon which formal application must be made.

A $10 application fee is required and must accompany the application.

The School of Nursing requires that applicants graduate from an approved high school in the upper one-third of the class. Applicants must meet University entrance requirements as to high school subjects and should preferably show strong preparation in mathematics, sciences, and languages. Each applicant must also submit scores from testing by the American College Testing Service (ACT). Pre-entrance medical and dental examinations are required. Applicants will be notified regarding appointment for personal interview with faculty of the School as soon as all application materials have been received.

Students in other schools and colleges who wish to apply to transfer to the School of Nursing will be required to present a minimum average of 2.5 (C+) for previous college work. Transfer students are accepted as beginning sophomores and must complete a minimum of three years in the School of Nursing.

Each applicant is expected to deposit $50 before her name is entered upon the official list of those accepted to the School of Nursing. If the applicant enrolls, this sum is applied to the tuition of the first semester. If the applicant fails to enroll, this deposit fee is forfeited by the applicant.

Registered nurses who wish to complete requirements for the baccalaureate degree are admitted as special students with advanced standing in nursing courses.

Inquiries should be directed to the Assistant Registrar, Medical Center.

The School of Pharmacy

The professional curriculum of the School of Pharmacy is based on two years of pre-pharmacy requirements. The pre-pharmacy course requirements are as follows:

Algebra	3 hr.	Biology, General	6-8 hr.
Trigonometry	3 hr.	Chemistry, General	8-10 hr.
English Composition	6 hr.	Chemistry, Quantitative	3 hr.
Principles of Economics	3 hr.	Physics	8 hr.
Public Speaking	3 hr.	Electives to make 60 hours	

The 60-hour requirement is exclusive of Military Science or Air Science, or Physical Education. In selecting electives, emphasis should be placed on the humanities and social sciences. A "C" average is considered the minimum standard for admission.

Applicants for admission to the School of Pharmacy should write to the Assistant Registrar, Medical Center, West Virginia University, who will furnish official blanks upon which formal application must be made.

A $10 application fee is required and must accompany the application.

Each applicant is expected to deposit $25 before his name is entered upon the official list of those accepted to the School of Pharmacy. If the applicant enrolls, this sum is applied to the tuition of the first semester. If the applicant fails to enroll, this deposit fee is forfeited by the applicant.

Complete information may be obtained from the Dean of the School of Pharmacy or from the Office of the Assistant Registrar, Medical Center.

REGISTRATION

Persons not registered as University students and who are not members of its administrative or teaching staffs shall not be admitted to regular attendance in University classes.

All students are expected to register on days set apart for registration at the beginning of each semester or term of the University.

Immediately after completion of their registration, all students are expected to pay their fees at the comptroller's desk in the Field House Annex (South).

Late Registration

No student will be permitted to register in the University after the eighteenth day of a semester or the ninth day of either term of the Summer Session, without the special permission of the dean of the college or school which he proposes to enter. No student registering late will be permitted to enroll for more hours of work than the number of weeks in actual attendance without the permission of the Committee on Scholarship of the college or school concerned.

Visitors

Full-time University students may attend classes as visitors, provided they obtain the written permission of their advisers and of the instructors in classes they desire to visit. Members of the administrative or teaching staffs, or other regular employees of

the University, may attend classes as visitors provided they obtain written permission of the chairmen of their departments and of the instructors in the classes which they desire to visit.

No record is kept of the work and attendance of persons admitted to classes as visitors and no credit is given for their work in such classes.

Persons eligible to attend classes in the University as visitors may obtain the proper blanks from the Registrar.

Auditors

Students may enroll in courses without working for grade or for credit by registering as auditors and by paying full fees. Credit or audit status must be indicated at the time of registration. *No change in status from audit to credit or from credit to audit will be made at any later date.*

Fees and Expenses

All University fees are subject to change without notice.

All fees are due and payable at the Comptroller's desk in the Field House Annex (South) on the days of registration. Fees paid after registration must be paid at the Comptroller's Office in the Administration Building. Students registering pay the fees shown on page 83 plus special fees and deposits as required. Students who have not paid their fees before the close of office hours of the second Saturday following the beginning of General Registration for a semester or a summer term shall be dropped from the rolls of the University, and the Registrar shall notify instructors that their class cards are to be withdrawn. All students failing to present bills for fees to the Comptroller prior to the time indicated in the preceding sentence shall be assessed a late payment fee of $10. The second Saturday following the beginning of General Registration for a semester is the end of the first refund period. The second Saturday following the beginning of General Registration for a summer term is the end of the refund period.

By order of the Board of Governors, no degree will be conferred upon any candidate prior to payment of all tuition, fees, and other indebtedness to any unit of the University.

Remission of Fees

Tuition and fees will be remitted to a student registered in the Graduate School of the College of Law who is employed by the University on a regular appointment, subject to the following:

(a) In no case will there be remission of fees payable to State special funds or those charged to special services (see "Special Fees") and flight fees; (b) Except as provided in "c", a graduate teaching or graduate research assistant will receive remission of tuition and fees commensurate with the hours of service required by the terms of his appointment; (c) A faculty member on full-time appointment at any recognized institution of higher learning located in West Virginia who is taking a course of graduate study at the University and holds an appointment as a graduate assistant under the terms of Order No. 3071 of the Board of Governors will receive full remission of tuition and fees; (d) A regular appointment is effective at the beginning of a semester or a summer term. Exemption from tuition and fees must be claimed at the beginning of the registration period or, in the case of a substitute appointment, within ten days after the appointment has been made; (e) A student who holds a regular University appointment and is eligible for remission of tuition and fees in the second semester of any regular academic year is also eligible for remission of tuition and fees in the summer session immediately following his term of appointment.

Students on regular University appointment who are registered in the Graduate School or the College of Law for twelve credit hours or more in any semester, or for five credit hours or more in any five-week summer term, and who qualify for remission of fees, are not subject to the fees payable to State special funds. They are not entitled to the services provided thereby without payment of the appropriate additional fees.

The wife (or husband) of any person employed by the West Virginia University Board of Governors for a faculty position with the rank of instructor or above, or for a research position of equivalent rank, or as the administrative head of a Uni-

versity division, or as an assistant administrative head, shall be charged the same fees as resident students. The dependent children of the person so employed shall also be charged the same fees as resident students.

Special Fees

Late-registration fee (non-refundable)[6]	$ 10.00
Graduation fee[7]	10.00
Professional Engineering degree (including $10 graduation fee)	25.00
Student's record fee[8]	1.00
Certificate in Home Economics	2.00
Associate in Arts Degree	2.00
Special extra fee for flight training:	
A.E. 171	100.00
A.E. 172	100.00
A.E. 173	100.00
A.E. 175	100.00
A.E. 176	100.00
A.E. 177	100.00
Fee for change in registration (after 8th day)	1.00
Fee for examination for entrance credit, per unit	1.00
Fee for examination for advanced standing	3.00
Fee for General Educational Development tests (high-school level)[9]	15.00
Certificate of Advanced Study in Education	2.00
Social Work certificate	2.00
Fee for reinstatement of students dropped from the rolls	3.00
Fee for examination of candidates for graduate degree[10]	1.00
Diploma replacement fee	5.00
Physical Education Student Activity Fee	5.00
Student Identification Card Replacement Fee	1.00
Correspondence Course in Guided Reading (per course)	1.00
Driver Education Laboratory Fee	10.00
Labor Education Service (for informal activities)	$2.00-$10.00

Fee for Extension Work

A fee of $12 per semester hour is charged for each extension course.

Fees for Undergraduate and Graduate Music Students

1. Full-time students:
   - A. Registered for Bachelors' or advanced degrees in Music or the Supervisory Training Program (in music):
     1. Resident students ..... $115.00 per semester
     2. Nonresident students ..... $280.00 per semester
   - B. Registered in other colleges or schools, including the Graduate School, except as noted above in "A":
     1. Class courses in Music, the regular fee for the college or school in which registered with no additional fee.

[6]This fee is not charged to students who complete registration during the regular registration days as set forth in the University Calendar. This fee became effective September 1, 1960.

[7]The graduation fee is payable by all students at the beginning of the semester or term in which they expect to receive their degrees.

[8]One transcript of a student's record is furnished by the Registrar without charge. This fee is charged for furnishing an additional transcript.

[9]If the applicant applies for admission to and registers in the University within twelve months of the date for his qualifying for the test, a ten dollar credit shall be established for him.

[10]For graduate students not otherwise enrolled at time of final examination.

2. Applied Music, the regular fee for the college or school in which registered plus Music fees as follows:
   a. Band and orchestra instruments, voice, piano, organ[11] $20.00
   b. Applied Music Classes in band and orchestra instruments, piano, voice ..... $ 5.00
   c. Ensemble: Chamber Music, Accompanying ..... $ 5.00

II. Part-time students:

A. Class courses in Music at the respective fee per credit hour (for resident students, $8 per semester hour; for nonresident students, $20 per semester hour).

B. Applied Music along with at least one other class course, the fee for the Applied Music shall be the respective fee per credit hour plus music fees as follows:

	LESSONS PER WEEK	
	One	*Two*
1. Band and orchestra instruments, voice, piano, organ	$20	$35
2. Applied Music Classes in band and orchestra instruments, piano, voice	$5.00 per semester	
3. Ensemble: Chamber Music, Accompanying	$5.00 per semester	

C. *Only* courses in Applied Music, the fee shall be the respective fee per credit hour plus Music fees as follows:

	LESSONS PER WEEK	
	One	*Two*
1. Band and orchestra instruments, voice, piano, organ	$27	$39
2. Applied Music Classes in band and orchestra instruments, piano, voice	$5.00 per semester	
3. Ensemble: Chamber Music, Accompanying	$5.00 per semester	

Piano and Pipe-Organ Practice:

(a) Piano for practice—one hour a day, $6 per semester; two hours, $10; three hours, $14, four hours, $18.

(b) Pipe-organ practice—one hour a day, $10 per semester.

(c) Band and orchestra instruments—rental fee $2.50 per semester.

Summer Session Fees[12]

	Resident	*Nonresident*
Tuition, per semester hour (Agriculture, Forestry, and Home Economics; Arts and Sciences; Commerce; Education; Engineering; Journalism; Mines; Music; Physical and Health Education, Recreation, and Safety)	*8.00[12]	*12.00[12]
Tuition per semester hour (Dental Hygiene, Law, Medical Technology, Nursing, Pharmacy)	*9.00	*14.00
Tuition, per semester hour (Dentistry and Medicine)	*12.00	*20.00
Health Service fee, per term	2.00	2.00
Mountainlair fee, per term	1.50	1.50
Cultural Program fee, per term	.75	.75
Student Union Building fee, per term	1.00	1.00

*Includes $4.00 per semester hour Registration Fee imposed by law, effective June 1, 1959.

[11]Maximum, one lesson per week

[12]The maximum tuition fee for West Virginia residents shall not exceed $40.00 for the Summer Session. The total Registration Fee collected from any student during the Summer Session shall not exceed $40.00.

Semester Fees (See Page 83)

A part-time student (graduate or undergraduate) enrolled for courses in two or more colleges and schools shall pay fees at the rate per semester hour effective for the number of hours in each college and school.

If the student (graduate or undergraduate) is enrolled for 12 or more hours in courses offered by two or more colleges and schools, but less than 12 in any one, he shall be considered to be a full-time student and shall pay the fees for special services (Athletics, Health Service, Mountainlair, Cultural Program, and Student Union Building) in addition to the part-time rates per hour for courses in each college and school.

If the student (graduate or undergraduate) is enrolled for 12 or more hours in courses offered by colleges and schools in Group I, he shall pay the full-time rate effective for Group I. (Does not include Flight Training. Does not include Applied Music for students who are not candidates for degrees in Music.) This student shall pay the part-time rate for any courses in colleges and schools in Group II and Group III.

If the student (graduate or undergraduate) is enrolled for 12 or more hours in courses offered by colleges and schools in Group II, he shall pay the full-time rate effective for Group II and may elect courses in colleges and schools in Group I at no additional cost or may elect courses in colleges and schools in Group III at the part-time rate effective for Group III. (Does not include Applied Music or Flight Training.)

If the student (graduate or undergraduate) is enrolled for 12 or more hours in courses offered by colleges and schools in Group III, he shall pay the full-time rate effective for Group III and may elect courses in Group I or Group II at no additional cost. (Does not include Applied Music or Flight Training.)

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[13]A full-time student is one who is registered for 12 or more semester hours of work each semester of the regular academic year, or 5 or more semester hours of work during the Summer Session. A full-time student during the regular academic year receives an Identification Card which entitles him to admission to all athletic events. A full-time student during the regular academic year or during the Summer Session is entitled to free medical consultation and advice from the University physician. A moderate charge is made for room calls, X-rays, special laboratory tests, drugs furnished by the University Pharmacy, minor operations, treatment of fractures and dislocations, and intravenous treatment.

[14]A part-time student is one who is registered for fewer than 12 semester hours per semester during the regular academic year, or for fewer than 5 semester hours during the Summer Session.

[15]No person shall be considered eligible to register in the University as a resident student who has not been domiciled in the State of West Virginia for at least twelve consecutive months next preceding college registration. No nonresident student may establish domicile in this State, entitling him to reduction or exemptions of tuition, merely by his attendance as a full-time student at any institution of learning in the State. A minor student whose parents acquire a West Virginia domicile after the student's original registration will be deemed to have the domicile of his parents and become entitled to pay resident fees. Moreover any student who has originally paid nonresident fees may become entitled to pay resident fees, if after an interim of nonattendance or otherwise he has established a valid legal domicile in this State at least twelve months prior to his registration in the University. In any event, the appointment of a guardian for a minor student temporarily resident in West Virginia, other than the designation of a natural guardian, shall not in and of itself operate to establish a West Virginia domicile for such student.

[16]The minimum rate for non-credit courses is that charged for one semester hour of credit.

[17]Athletic Fee, Student Organizations Fee, Daily Athenaeum Fee, Health Service Fee, Mountainlair Fee, Cultural Program Fee, and Student Union Building Fee, all chargeable to Special Services, nonrefundable during this period.

SEMESTER FEES IN THE COLLEGES AND SCHOOLS

(See footnotes 13, 14, 15, 16, and 17)

	Full Time		Part Time (Per Semester Hour)	
	Resident	Nonresident	Resident	Nonresident
GROUP I Agr., For., Home Econ. Arts and Sciences Commerce Education Engineering Journalism Mines Music Physical and Health Education, Recreation, and Safety	$65.00* plus Registration Fee of $50.00, imposed by law, effective June 1, 1959.	$230.00* plus Registration Fee of $50.00, imposed by law, effective June 1, 1959.	$4.00 plus $4.00 per semester hour Registration Fee, imposed by law, effective June 1, 1959.	$16.00 plus $4.00 per semester hour Registration Fee, imposed by law, effective June 1, 1959.
GROUP II Dental Hygiene Law Medical Technology (Jr. and Sr. Years) Nursing Pharmacy	$80.00* plus Registration Fee of $50.00, imposed by law, effective June 1, 1959.	$255.00* plus Registration Fee of $50.00, imposed by law, effective June 1, 1959.	$5.00 plus $4.00 per semester hour Registration Fee, imposed by law, effective June 1, 1959.	$17.00 plus $4.00 per semester hour Registration Fee, imposed by law, effective June 1, 1959.
GROUP III Dentistry Medicine	$142.00* plus Registration Fee of $50.00, imposed by law, effective June 1, 1959.	$360.00* plus Registration Fee of $50.00, imposed by law, effective June 1, 1959.	$8.00 plus $4.00 per semester hour Registration Fee, imposed by law, effective June 1, 1959.	$26.00 plus $4.00 per semester hour Registration Fee, imposed by law, effective June 1, 1959.

*Includes Athletics $8, Student Organizations $1.25, Daily Athenaeum $.75, Health Service Fee $6, Mountainlair Fee $4, Student Union Building Fee $3, and Cultural Program Fee $2.

Parkersburg Branch of West Virginia University: $20 per semester hour.

Deposits

The deposits required are: breakage deposit in chemistry, $7 or $12; breakage deposit for students enrolled in medical technology courses and in the School of Medicine, $10; for students enrolled in other colleges and schools of the University electing courses in medical technology or medicine, $5 for one laboratory course and $10 for more than one course; air or military science deposit, $20; breakage deposit in dentistry, $10; nursing, $12. Students enrolled in certain courses in Pharmacy, Medical Technology, Medicine, or Dentistry must pay a microscope rental fee of $20.00 per semester.

Refunding of Fees

A student who officially withdraws from the University may arrange for a refund of fees by submitting to the University Comptroller evidence of approval of the refund by the Registrar.

To withdraw officially a student must apply to the Registrar for permission. Semester fees will be returned in accordance with the following schedule:

First refund period ending on the second Saturday following the beginning of General Registration.	50% of Athletics Fee, Student Organizations Fee, Daily Athenaeum, Fee, Health Service Fee, Mountaintainlair Fee, Student Union Building Fee, and Cultural Program Fee, all chargeable to Special Services; and all other semester fees less $2.50. (Under no circumstances is the amount retained less than $2.50).
Second refund period ending on the fourth Saturday following the beginning of General Registration.	50% of Athletics Fee, Student Organizations Fee, Daily Athenaeum, Fee, Health Service Fee, Mountaintainlair Fee, Student Union Building Fee, and Cultural Program Fee, all chargeable to Special Services; and 80% of all other semester fees.
Third refund period ending on the sixth Saturday following the beginning of General Registration.	60% of semester fees not chargeable to Special Services.[17]
Last refund period ending on the eighth Saturday following the beginning of General Registration.	40% of semester fees not chargeable to Special Services.[17]

The University Board of Governors has ordered that students called to the armed services of the United States be granted full refund of refundable fees, but no credit, if the call comes before the end of the first three-fourths of the term, and that full credit by courses be granted to men called to the armed services of the United States if the call comes thereafter; provided, however, that credit as described above will be granted only in those courses in which the student is maintaining a passing mark at the time of his departure for military service. In the recording of final grades, for three-fourths of a term or more, both passing and failing grades are to be shown on the student's permanent record card.

Cost of an Academic Year's Work

A student's textbooks will cost approximately $75 a year, and his registration fees $230 to $384 if he is a resident; or $560 to $820 if a nonresident. Students in engineering will use drawing instruments costing from $15 to $30. The laboratory breakage deposit required ranges from $7 to $12, a part of which is usually returned

at the end of the year. In air and military science a $20 deposit is required to cover military equipment in the custody of the student, practically all of which is returned to the student when he accounts for his equipment. Board and room may be obtained at from approximately $600 to $650 a year. Traveling expenses, clothing, and other miscellaneous items will depend largely upon the taste and habits of the individual student. In general, however, it may be said that the legitimate cost of a 9-month term of residence at the University ranges from $1,100 to $1,600 a year.

CLASSIFICATION OF STUDENTS

The following table shows the number of semester hours required for classification as second-year, third-year, and fourth-year students and for graduation, according to the curricula in the several colleges, schools, and divisions. First-year students must satisfy the requirements as set forth on pages 67-68.

COLLEGE AND DEGREE	HOURS REQUIRED TO CLASSIFY AS Second-Year Student	Third-Year Student	Fourth-Year Student	Required for Degree
AGRICULTURE, FORESTRY, AND HOME ECONOMICS				
B.S. (Bachelor of Science)	26	64	100	144
B.S. in Agriculture (B.S.Agr.)	26	64	100	144
B.S. in Forestry (B.S.F.)	30	70	110	150
B.S. in Home Economics (B.S.H.E.)	25	58	92	128
AGRICULTURAL ENGINEERING				
B.S. in Agr'l Eng'g (B.S.Agr.E.)	30	72	112	148
ARTS AND SCIENCES*				
Associate in Arts (A.A.)	25	..	..	64
Bachelor of Arts (A.B.)				
Regular	25	58	92	128
Premedical	32	58	96	128
Combined (Dentistry)[18]	32	58	96	132
Combined (Medicine)[19]	32	58	96	132
BACHELOR OF SCIENCE (B.S.)				
Geology	32	58	99	132
Chemistry	34	69	103	136
Nursing Education	25	58	92	128
Physics	34	69	103	136
Social Work	25	58	92	128
COMMERCE				
B.S. in Bus. Ad. (B.S.Bus.)	..	58	92	128
B.S. in Economics (B.S.Ec.)	..	58	92	128
DENTISTRY				
Doctor of Dental Surgery (D.D.S.)	33	70	106	142

*Unless otherwise stated, a minimum of 128 hours is required for all degrees awarded by the College of Arts and Sciences. This must include at least 124 hours exclusive of required Physical Education and required Military or Air Science.

[18]Fourth year in the School of Dentistry.
[19]Fourth year in the School of Medicine.

COLLEGE AND DEGREE	HOURS REQUIRED TO CLASSIFY AS Second-Year Student	Third-Year Student	Fourth-Year Student	Required for Degree
EDUCATION[20]				
B.S. in Elem. Educ. (B.S.E.Ed.)	..	58	92	128
B.S. in Secondary Educ. (B.S.Sec.Ed.)	..	58	92	128
ENGINEERING[21]				
Bachelor of Science	27	60	94	133
B.S. in Aero-Space Eng'g (B.S.A-S E.)	30	72	112	148
B.S. in Chem. Eng'g (B.S.Ch.E.)	30	72	112	148
B.S. in Civil Eng'g (B.S.C.E.)	30	72	112	154
B.S. in Elec. Eng'g (B.S.E.E.)	30	72	112	148
B.S. in Ind. Eng'g (B.S.I.E.)	30	72	112	148
B.S. in Mech. Eng'g (B.S.M.E.)	30	72	112	148
JOURNALISM				
B.S. in Journalism (B.S.J.)	.	58	92	128
LAW				
Bachelor of Laws (LL.B.)	27	54	..	81
MEDICINE				
Bachelor of Science (B.S.) Medical Technology	25	58	100	135
MINES				
B.S. in Eng'g of Mines (B.S.E.M.)	30	72	112	154
MUSIC				
Bachelor of Music (B.Mus.)	30	64	102	136
NURSING				
Bachelor of Science (B.S.)	30	64	To Be Determined	
PHYSICAL AND HEALTH EDUCATION, RECREATION, AND SAFETY				
Bachelor of Science in Physical Education (B.S.P.E.)	28	58	92	128
Bachelor of Science in Recreation (B.S.Rec.)	28	58	94	130

[20]For the Degrees of Bachelor of Science in Education, at least 30 hours of residence work must be in Education.

[21]Students matriculating with 58 or more hours of credit may graduate with 148 hours, since physical education is not required of these students.

EXAMINATIONS AND REPORTS

Courses

As a rule courses extend through one semester only. In the College of Law, however, courses may extend either through the entire year or through one semester. No credit will be given for less than an entire course except by special order of the Committee on Scholarship. Grades given at the end of the first semester in courses extending throughout the year are merely indicative of the quality of work done by the student to that point and do not give credit for the part of the course so far completed. Such first-semester grades may be considered in determining the final grade, however.

Mid-Semester and Final Examinations

In practically all courses offered in the University, the student receives both a preliminary or mid-semester grade and a final grade. The mid-semester standing of a student is based on the daily recitation grades and a special test given during one or more regular recitation periods. Mid-semester grades are not entered on the Registrar's records. The final grade is based on the class standing for the entire semester and on a written final examination to which a special period of two or three hours is devoted.

Examination Periods

Mid-semester examinations are held during the week immediately preceding the day of the mid-semester reports as set forth in the University Calendar. Final examinations are held during the last week of each semester of the academic year, and during the last two days of each term of the Summer Session.

Absence From Examinations

Students are required to take all regular examinations. If a student attends a course throughout the semester and is absent from examination without permission, the instructor shall count the examination as zero and report the final grade as "F." If, in the opinion of the instructor, absence of the student was for satisfactory reason, the fact will be recorded on the student's class ticket, the grade "I" will be returned, and the student may, upon application to the instructor, take the examination at a later date.

Reports

Mid-semester grades are reported to students' advisers and to deans but are not recorded in the office of the Registrar.

Final grades are reported by instructors directly to the Registrar's office. Final grades must be in the hands of the Registrar within 48 hours after the closing hour of the examination. The rule also applies to the final grades of all students registered in other colleges or schools of the University who are enrolled in law courses.

The final standing of all seniors provisionally approved for graduation shall be reported by their instructors to the deans of their colleges or schools, and the final standing of all graduate students provisionally approved for graduation shall be reported to the Dean of the Graduate School. Special report cards are supplied by the Registrar.

A report of each student's work is made at the close of the semester or summer session to the student himself and to his parents or guardian.

Absences

Students shall attend all classes, including laboratory sessions, for which they are registered, unless prevented from doing so by illness, injury, authorized University activities, or other reasons approved by their deans. The student who is absent for any of the foregoing reasons is nevertheless responsible for the work missed.

SCHOLASTIC STANDING AND GRADE POINTS

Grading System

A—excellent (given only to students of superior ability and attainment)
B—good (given only to students who are well above average, but not in the highest group)
C—fair (average students)
D—poor but passing[22]
F—failure
I—incomplete
W—all withdrawals prior to the end of the second week following the date set for mid-semester reports
WP—withdrew passing subsequent to the end of the second week following the date set for mid-semester reports
WF—withdrew failing subsequent to the end of the second week following the date set for mid-semester reports
X—auditor, no grade and no credit

Grade Points

The grade-point average is computed on all work for which the student has registered, except for the courses with grades of "W" and "WP," and is based on the following grade-point values:

A	B	C	D[23]	F	WF	I	X
4	3	2	1	0	0	0	0

Provided, however, that when a student receives a grade of "I" and later removes the incomplete grade, his average grade-point standing shall be calculated on the basis of the new grade.

If the final grade of a student in any course is "F," the student must take the course again if he desires to receive credit for it. The grade of "I" is given when an instructor believes that the course work is unavoidably incomplete or that a supplementary examination is justifiable. The grade of "I" can be removed within the following semester or the next semester in which the student is in residence, and becomes a failure unless special permission is granted by the appropriate Scholarship Committee to postpone removal.

Duties of Committee on Scholarship

The Committee on Scholarship shall have authority to proceed according to its best judgment in regard to delinquent students referred to it for consideration.

All orders of the committee shall become effective when approved by the dean of the college or school.

In the exercise of its authority the Committee shall not suspend a student during a semester except for wilful neglect and in cases where the student's class grades are so low that further class attendance would be a waste of time. No suspension shall become effective until approved by the dean of the college.

[22]Veterans of World War II or Korea may register for courses in which they have a grade of "C" or higher, but no credit will be given for the new listing.

[23]Students, unless enrolled in the School of Dentistry, College of Law, School of Medicine, School of Nursing, or School of Pharmacy, are permitted to re-register at West Virginia University for any courses for which a grade of "D" has been received at West Virginia University while first year students. (See pp. 85-86 for classification of students). In such cases the second grade shall supersede the first, providing it is not lower than "D". All work attempted after the first year shall be included in the computation of the grade-point average for degree purposes.

For teacher certification the student is responsible for every registration in a course for which a grade of A, B, C, D, F, WF, or I is received.

The University grade-point average is computed on all work attempted in all years.

Duties of Instructors

Each instructor shall be responsible for keeping an attendance record of students in his classes and shall report an excessive number of absences to the student's dean and his adviser.

Duties of Advisers

All advisers, upon receipt of reports of excessive numbers of absences, shall have conferences with the students concerned and shall make such recommendations and adjustments as are desirable and feasible. If the adviser does not find a satisfactory solution after a conference with the student, he shall report the case to the dean of the college or school.

Probation and Suspension

Any student whose mid-semester grades are below passing in courses amounting to more than half of the total number of semester hours for which he is registered shall be placed on probation for the remainder of the semester. The terms of probation are determined by the respective scholarship committees.

Any student whose grades at the end of any registration period are below passing in courses amounting to more than half the total number of semester hours for which he is registered shall be suspended from the University. A freshman, subject to the operation of this rule at the end of his first registration period in residence, shall be placed on probation for the succeeding registration period.

All actions of the Committee on Scholarship and of the dean or instructor of the college or school that affect the standing of a student shall be reported by the dean to the Registrar.

Regulations Affecting Degrees

Candidates for degrees are eligible for graduation upon completion of the requirements in the college or school in which they are registered which were in effect at the time of their first registration in that college or school, provided they apply for graduation within a period of seven years from the time of their first registration. Students who fail to complete the requirements for graduation within seven years from their first registration shall satisfy the requirements in effect at the time they apply for graduation.

The University Board of Governors has ordered that in view of public and professional responsibilities the faculty of each of the professional schools of West Virginia University shall have the authority to drop any student from its rolls whenever, by formal decision reduced to writing, the faculty finds that the student is unfitted to meet the qualifications and responsibilities of the profession.

All degrees are conferred by the Board of Governors upon recommendation of the faculties of the various colleges and schools. Degrees are granted at the close of the semester or summer session term in which the students complete their work.

Candidates for degrees to be conferred at the close of the second semester must be present in person to receive their degrees unless excused by the deans of their colleges and schools. No individual may be exempt from the provisions of this University regulation except by official action of the Board of Governors.

BACCALAUREATE DEGREES

Credits and Grade Points Required

Less than 6 hours in an ancient or modern language will not be counted toward any University degree, diploma, or certificate unless work in the same language has been offered for entrance.

Six hours of English composition and rhetoric (English 1 and 2) are required of all candidates for the Bachelor's Degree in all colleges and schools of the University.

Eight hours of basic military science or air science are required of all freshman and sophomore men not specifically exempt.

Two hours of physical education for men (P.E. 1 and 2), to be taken during the first year in residence, and four hours of physical education for women (P.E. 3-25, 101-102), to be taken during the first and second years in residence, are required for graduation, except in the case of students entering with advanced standing amounting to 58 semester hours or more.

Each undergraduate who is a candidate for an initial baccalaureate degree and who began college work after June 1, 1952, must pass a proficiency examination in English after the beginning of the junior year in order to qualify for graduation. (This examination, however, is not required of students of foreign countries whose native language is other than English). He shall take the examination during the first semester of his junior year, and if not declared proficient, shall repeat the examination as many times as necessary. The examination shall be administered by the English Proficiency Board.

Each baccalaureate degree is conditioned upon the completion of a specified number of semester hours of credit. For a tabular statement of the number of credit hours required for each degree, see the last column on pages 85 and 86 under the heading "Classification of Students."

All divisions of the University require minimum standards of scholastic quality. Grade points are computed only on grades earned at West Virginia University (including Potomac State College of West Virginia University). To be eligible for graduation, a student must have an average of "C" or an average of two grade points on all work for which he received grades (except "W" and "WP"). The College of Education, in addition to the general average of two grade points per credit hour in all subjects, requires an average of two grade points per hour of credit in Education and in each teaching field.

It is the student's responsibility to keep informed of his grade-point standing. This information may be obtained at any time from the dean of the college, school, or division in which the student in registered.

Graduation With Honors and With High Honors

Effective June 1, 1949, the University established the practice of awarding "Honors" and "High Honors" to qualified students who are candidates for the initial baccalaureate degrees. The following regulations govern these awards:

1. The computation of the average shall begin with the student's penultimate term or semester and continue in reverse chronological order until at least 48 semester hours have been counted. If, in order to total the required number of hours it is necessary to include any part of a semester or term, the work of the whole semester shall be included.

2. No graduate shall be eligible for honors unless he shall have completed at least half of the semester hours required for his degree in West Virginia University.

3. The senior year must be at the University.

4. No graduate shall be eligible for honors if his grade-point average for his final semester or term is less than 3.0.

5. Subject to the above conditions, all candidates for a baccalaureate degree whose average, as shown by the portion of the work used, is 3.6 or above, shall be graduated with "High Honors." All those whose average is less than 3.6 but 3.3 or above, shall be graduated with "Honors."

6. Fitting recognition of graduation with honors shall be made on the candidate's diploma and on the commencement program.

Requirements as to Residence

Students who come to the University from other colleges or universities are advised to make the transfer not later than the beginning of their third year and in no case will a student who matriculates in the University later than October 1 in any year be permitted to receive a degree at the next commencement.

In special cases students who desire to leave the University at the close of their third year to enter another institution with the purpose of taking a combined course leading to two degrees or of preparing for graduate study, upon application beforehand to the Committee on Scholarship of the college or school in which they are registered, may be permitted to do the work of the fourth year, or a part thereof, at such other institution and to receive the Bachelor's Degree from the University upon the presentation of the proper credits.

Except in the College of Law, no student will be granted a Bachelor's Degree by the University who has not done either a total of 90 hours or the last 30 hours of his work in actual residence at the University. No student may receive the Degree of Bachelor of Laws without at least three semesters in residence at the College of Law and the successful completion of courses aggregating at least one-half of the total number of hours required for graduation. Except with the permission of the Scholarship Committee, the last 27 hours of work must be taken in the College of Law of West Virginia University.

Maximum and Minimum Work

The maximum and minimum number of hours per semester as well as the maximum number of hours per year for which a student may register during the regular academic year of the University are as follows:

	Minimum Hours per Semester	*Maximum Hours per Semester*	*Year*
Agriculture	14	20	..
Arts and Sciences	14	18	..
Commerce	14	18	..
Dentistry	16	22	..
Education	..	18	36
Engineering	14	20	..
Forestry	14	20	..
Home Economics	14	18	34
Journalism	14	18	36
Law	13	16	..
Medicine	17	20	..
Mines	12	20	..
Music	14	20	..
Nursing	14	20	..
Pharmacy	14	20	..
Physical and Health Education, Recreation, and Safety	14	20	.....

Work of the Summer Session is equivalent in character to that of the regular year. One hour's credit per week is a normal load for either term; but in order to facilitate scheduling of courses, undergraduate students may carry 7 hours if the periods are seventy-five minutes in length.

A student desiring to do irregular work, more or less than the prescribed number of hours in any college, must obtain permission from the Committee on Scholarship in his college or school. This permission is not valid until it has been reported to the Registrar for record.

Work Done Out of Residence

It is the policy of the University to discourage the taking of regular residence courses in absentia. In the case of courses begun at the University and not completed because of illness or for other acceptable reasons, however, permission to complete the work in absentia under the direction of the regular University instructors may be granted by the Committee on Scholarship; but in such case credit should be given only upon a report of the grade of no less than "C" on final examination.

This regulation does not apply to University extension courses.

Credit for Correspondence Work

Credit up to a maximum of 30 semester hours for work completed by correspondence in non-laboratory courses will be accepted by the University when such work is given by accredited colleges or universities that accept this work for credit toward their own degrees and whose residence work is accepted by West Virginia University.

College Credit Defined

A college credit or semester hour represents the amount of work done in one semester in one recitation hour with two preparation hours a week. From two to three hours of laboratory work are considered equivalent to one hour of recitation, according to the amount of outside work assigned in connection with the laboratory hours.

Substitution for Required Courses

A student who desires to substitute another course for any course prescribed in his curriculum or required for the degree toward which he is working must obtain permission for such substitution from the Committee on Scholarship in his college or school, but there can be no substitution from group to group.

WITHDRAWAL FROM THE UNIVERSITY

A student who desires to withdraw from the University must obtain a withdrawal card from the office of the Registrar, 205 Administration Building. Withdrawal procedure will be explained to him when he obtains this card.

Students who withdraw from the University without permission will receive at the end of the semester a grade of "F" (failure) in each of the courses for which they are registered and will be indefinitely suspended from the University.

Students who desire to drop part of their work may withdraw from classes in which they are enrolled with a grade of "W" at any time prior to the end of the second week following the date set for mid-semester reports. Withdrawal permits must be approved by the adviser and accepted by the Registrar. If such withdrawal reduces the student's hours below the required minimum, the permit must be approved by the Scholarship Committee. Withdrawals after the above date will be permitted only in exceptional cases and must be approved by the Scholarship Committee of the college or school in which the student is registered.

Students must present a signed statement from the Librarian that they have returned all books and paid all library fines before they will be allowed to withdraw.

Re-Entry After Withdrawal

Students required to withdraw from one college or school of the University because of failure in their work and permitted to transfer to another unit of the University may not again register in the college or school in which they were originally registered without the consent of the Scholarship Committee of that college or school.

Part III

CURRICULA AND COURSES

ABBREVIATIONS

The following abbreviations are used in the descriptions of courses.

I—a course given in the first semester.
II—a course given in the second semester.
I, II—a course given in each semester.
I and II—a course given throughout the year.
S—a course given in the Summer Session.
SI—a course given in the first term of the Summer Session.
SII—a course given in the second term of the Summer Session.
hr.—number of credit hours per course.
consent—consent of instructor required.
PR:—prerequisite.

PLAN FOR NUMBERING COURSES

For convenience each course of study is designated by the name of the department in which it is given and by the number of that course. The plan for numbering is as follows:

Courses 1 to 99—courses intended primarily for freshmen and sophomores.
Courses 100 to 199—courses intended primarily for juniors and seniors.
Courses 200 to 299—advanced courses for juniors, seniors, and graduates.
Courses 300 to 399—courses open to graduate students only.

SEMESTER COURSE SCHEDULES

Before the opening of each semester, a schedule is printed announcing the courses that will be offered in the College of Agriculture, Forestry, and Home Economics; the College of Arts and Sciences; the College of Commerce; the College of Education; the School of Journalism; the Division of Military Science and Air Science; the School of Music; and the School of Physical and Health Education, Recreation, and Safety. Schedules are prepared for the School of Dentistry, the College of Engineering and the School of Mines, the College of Law, the School of Medicine, the School of Nursing, and the School of Pharmacy, but are not printed.

The College of Agriculture, Forestry, and Home Economics

ORGANIZATION

Agricultural, forestry, and home economics work at West Virginia University is organized under the College of Agriculture, Forestry, and Home Economics. For the purpose of administration the College is divided into five branches:

I. Resident instruction in agriculture.
II. Resident instruction in forestry.
III. Resident instruction in home economics.
IV. The Agricultural Experiment Station, organized for research and experimental work in agriculture, forestry, and home economics.
V. Cooperative Extension work in agriculture, forestry, home economics and boys' and girls' club work for citizens of the State who are not in residence at the college.

The work of these divisions is closely interrelated. Although some members of the staff devote full time to college instruction, research or extension work, many others divide their time between two or three of the divisions.

OBJECTIVES

To provide an academic setting of excellence in which a young man or woman may attain his or her higher education goals.

To provide a selection of courses through various options for organizing different programs of study leading to proficiency in many professional fields directly in and related to agriculture, forestry, and home economics.

To provide advanced training courses leading to degrees at master's and doctoral levels.

To carry out a research program in fields and problem areas of pertinence to West Virginia.

To conduct an off-campus informal educational program disseminating to West Virginia families up-to-date information on subjects related to agriculture, forestry, and home economics.

HISTORY AND FACILITIES

In 1895 the College of Agriculture was established as a distinct college in the University. The Agricultural Experiment Station, founded in 1888, became part of the College at the time the latter was instituted. The Cooperative Extension Service was added in 1913, and in 1914 the Department of Home Economics was transferred from the College of Arts and Sciences. Organization of the College was completed in 1937 when a full four-year course in forestry was added. The name of the unit then was changed to "The College of Agriculture, Forestry, and Home Economics."

The Experiment Station was established by the Board of Regents in 1888 by authority of an Act of Congress known as the Hatch Act. Further support was given by Acts of Congress known as the Adams Act, the Purnell Act, and Bankhead-Jones Act, the Research and Marketing Act of 1946, and the Hatch Act as amended in 1955.

The Cooperative Extension Service was established by Act of the Legislature in 1913, amended in 1915, to cooperate with the Federal Government in carrying out the provisions of the Smith-Lever Act of May 8, 1914, and as amended again in 1953 and in 1955. Cooperative Extension work is further supported by the Agricultural Marketing Act of 1946 and the Charles-McNary Act of 1924, amended October 26, 1949.

The basis on which Cooperative Extension work is conducted is the Memorandum of Understanding between West Virginia University and the United States Department of Agriculture. The Memorandum in its present form is as revised in 1954.

The College now has 900 acres of land for farming lying at a short distance from the University campus. This land is divided into five farms. Each of the farms is equipped with modern farm buildings and with special buildings for classroom, experimental, and laboratory work.

A Home Management House and a Nursery School are located close to Oglebay Hall.

Branch experiment stations are maintained at Wardensville, Point Pleasant, Kearneysville, and Reedsville. The Reymann Memorial Experimental Farms at Wardensville was established in 1917. It occupies 987.5 acres of farm land on the Cacapon River in Hardy County. The farm is being operated on an experimental basis involving pasture improvement, erosion control, soil rebuilding, water conservation, irrigation, crops, beef cattle, sheep, and poultry.

The Ohio Valley branch experiment station of 150 acres at Point Pleasant on the Ohio River was acquired in 1948. It is operated as a unit for the experimental work in tobacco and truck and field crops of special interest to the farmers of the Ohio and Kanawha valleys.

The University Experiment Farm, a tract of 158 acres near Kearneysville in the eastern fruit section, was established in 1930 as a branch experiment station for the study of problems relating to fruit production, including insect and disease control, as well as problems of general farming typical of the section.

The Reedsville Experiment Farm in Preston County was acquired in 1944. Work on this 457-acre farm consists of programs with potatoes, ornamentals, small fruits, corn and legumes in rotations, livestock, hillculture, and agricultural engineering.

The Cooperative Extension Service is organized for the purpose of disseminating up-to-date and practical information to West Virginia families in the subjects of Agriculture, Forestry, and Home Economics. Its work is carried out through the County Extension offices of which there is one in each of the 55 counties in West Virginia. Twenty-five subject-matter specialists stationed on the campus make available their technical services to the people of the State through the County Extension offices.

Bulletins, circulars, and pamphlets setting forth the results of experiments, investigations and recommendations are published for free distribution and may be obtained from the County Extension Agent in each county.

With its farm land, buildings, and equipment the College of Agriculture, Forestry, and Home Economics offers thorough and complete training in most branches of agriculture, forestry, and home economics that is applicable to West Virginia conditions.

HEADQUARTERS FOR COLLEGE DIVISIONS

The Dean of the College, the Director of Resident Instruction for Agriculture, the Director of the Agricultural Experiment Station, and the Director of the Cooperative Extension Service are located in the Agricultural Sciences Building on the Evansdale Campus. The Director of the Division of Forestry is located in the Forestry Building on the Main Campus. The Director of the Division of Home Economics is located in Oglebay Hall on the Main Campus.

FACULTY COMMITTEES

Courses and Hours: Messrs. W. H. Childs, H. C. Evans, W. H. Reid, and E. J. Nesius; Miss Sara Ann Brown.

Faculty Executive: Messrs. G. E. Toben, K. L. Carvell, M. E. Gallegly, J. Luchok, E. J. Nesius; Mary Rose Jones.

Library: Messrs. R. E. Adams and K. L. Carvell; Miss Elisabeth Yearick.

Scholarship: Messrs. O. E. Schubert, Norman Jackson; Miss Lavina Franck.

Administrative Committee on Student Aid and Grants: Messrs. O. J. Burger, W. C. Percival; Mrs. Francena Nolan.

Veterinary Medicine Screening Committee: Messrs. E. J. Nesius, O. J. Burger, N. O. Olson, J. Everett Long, L. R. Gribble.

Division of Agriculture

The Division of Agriculture offers courses of study to prepare the student for the business, education, basic and applied science, and engineering opportunities in agriculture. The agriculture industry needs engineers, scientists, teachers, managers, consultants, county agents, and conservationists, as well as farmers. A farm background is desirable for students majoring in agricultural education and applied agricultural science.

Degrees Granted in Agriculture

The Division of Agriculture offers programs of study leading to the following degrees:

1. Bachelor of Science (B.S.)
2. Bachelor of Science in Agriculture (B.S.Agr.).
3. A grade-point average of not less than 2.0000.

Degree Requirements

The requirements for the degree of Bachelor of Science and the degree of Bachelor of Science in Agriculture are:

1. Courses listed in the Foundation Curriculum must be completed with passing grades (for freshmen enrolling September, 1961, and beyond). Students enrolled in the Agricultural Engineering curriculum are exempt from Agriculture 11 and 12.
2. Additional courses must be taken to satisfy the requirements of the chosen Agriculture curriculum option.
3. A grade-point average of not less than 2.000.
4. All students must pass the English Proficiency Examination.

NEW CURRICULUM IN AGRICULTURE

(Effective September, 1961)

Students enrolling as freshmen in the Division of Agriculture beginning in September, 1961 will be governed by the Requirements for Degrees as specified in the new curriculum for agriculture beginning on page 98.

(Note: Students already enrolled in the Division will abide by the Requirements for Degrees as described on page 102. These students however, may elect—if they so desire—to complete the same requirements that are set forth herein for freshmen students entering in September, 1961).

The new curriculum options for Applied Science, Basic Science, Business, and Education consist of two parts:

1. A series of Foundation Courses common to the curriculum options (see page 98).
2. Additional requirements to each curriculum in one of the four agriculture options: Applied Science, Basic Science, Business, and Education (see page 99).

Selection of Options

Students entering the Division of Agriculture as freshmen after September 1, 1961, must select one of the following options before registering for their third semester:

1. Applied Science.
2. Basic Science.
3. Business.
4. Education.
5. Engineering.

Transfer students must make their selection prior to their second registration in the Division of Agriculture.

Students selecting Applied Science, Business, or Education options will receive the Degree of Bachelor of Science in Agriculture as evidence of satisfactory completion of the requirements of the curriculum. Fulfillment of the requirements of the Basic Science option leads to the Degree of Bachelor of Science; that of Engineering to the Degree of Bachelor of Science in Agricultural Engineering.

Pre-Veterinary students working to meet the requirements for entrance into veterinary school may do so within the framework of either the Applied or Basic Science options.

Student Advisers

Entering students will be assigned an adviser by the Director of Resident Instruction. Changes in advisers may be initiated by either the student or the adviser; however, such changes must have prior approval of the new adviser and the Director of Resident Instruction.

AGRICULTURE CURRICULUM OPTIONS

The Applied Science Option

The Applied Science option, leading to the degree of Bachelor of Science in Agriculture, is designed for students who desire maximum specialization in the broad field of agriculture. The requirement of 30 hours of Agriculture, in addition to those in the Foundation Curriculum and the provision for 16 hours of free electives, will present an opportunity for specialization or broad general training in agriculture. The requirement of mathematics, statistics, biological science, and physical science will insure that this specialization will be accompanied by the basic knowledge necessary for agricultural specialization.

The Basic Science Option

The Basic Science option, leading to the degree of Bachelor of Science, is designed for students who are interested in teaching agricultural science and especially for those interested in research. Although this option provides the least amount of specialization in technical agriculture, it provides a wide latitude in associated areas. A student must complete mathematics through analytical geometry, and chemistry through organic chemistry. This option provides the opportunity to develop a degree of specialization in either physiology, microbiology, soil chemistry, biochemistry, pathology, and genetics, or to develop the basic sciences through physical chemistry and calculus. Additional requirements of language, humanities, and social sciences encourage the cultural development of the student.

The Business Option

The Business option, leading to the degree of Bachelor of Science in Agriculture, is designed for students who may wish to enter areas of management, sales, and operation of agricultural and/or related enterprises. The Business option will provide sufficient variety in agriculture courses and a depth of training in one area. In addition, it provides a minimum of 30 hours of business, economics, and allied subjects that will enable a student to progress rapidly in the business aspects of his vocation.

The Education Option

The Education option, leading to the degree of Bachelor of Science in Agriculture, is designed to prepare students to teach in West Virginia high schools. It satisfies the West Virginia State Board requirements and those of the College of Agriculture, Forestry, and Home Economics. A program is provided to train the students in the basic and applied sciences and to prepare them for a teaching career in the field of vocational agriculture. It also includes provisions for the teaching of biological science as a second field.

THE FOUNDATION CURRICULUM*

(Required for all Curriculum Options)

	Hr.
Introduction to Agriculture	
Agriculture 11—Professions in Agriculture	1
Agriculture 12—Professions in Agriculture	1
Agricultural Science	
Agriculture 51—Principles of Animal Science	4
Agriculture 52—Principles of Plant Science	4
Agronomy 2—Principles of Soil Science	3
Agricultural Engineering 10—Principles of Agricultural Engineering	3
Economics	
Economics 1—Principles of Economics	3
Agricultural Economics 103—Agricultural Economics	3
Communication Skills	
English 1—Composition and Rhetoric	3
English 2—Composition and Rhetoric	3
Speech 11—Public Speaking	3
Physical Science and Mathematics	
Chemistry 1—Inorganic Chemistry	4
Chemistry 2—Inorganic Chemistry	4
Physics 1	4
Physics 2	4
Mathematics 3—College Algebra	3
Mathematics 4—Trigonometry	3
Biological Science**	
Botany 1—General Botany	4
Zoology 1—General Zoology	4
TOTAL	61

*Courses of Instruction in the Division of Agriculture may be found beginning on page 111.

**Students selecting a major requiring only one course in Zoology or one course in Botany may take Vertebrate Zoology (Zool. 2) and Structure and Function of Seed Plants (Botany 1). Either Evolution of the Plant Kingdom (Bot. 2), or Invertebrate Zoology (Zool. 1) may be taken to fulfill the requirements in those majors requiring additional credit in biological sciences.

All courses listed in the Foundation Curriculum are required of all students and should be completed with a passing grade before reaching the fourth-year status of 100 hr. Courses within this category not completed before the student attains fourth-year status still must be passed but the hours will not then count toward the total needed for graduation. Exceptional cases will be handled by the Dean.

AGRICULTURAL ENGINEERING

See page 110 for details concerning the Agricultural Engineering curriculum.

ADDITIONAL REQUIREMENTS TO THE FOUNDATION CURRICULUM

(Hours Required by Agriculture Options)

Subject-Matter Area	Applied Science	Basic Science	Business	Education	Courses for Selection
Communications	3	3	3	3	From advanced courses in written and spoken English, Literature, and Journalism
Humanities and Social Sciences	9	6	9	13	Humanities, Music, Art, Philosophy, Logic, Sociology (including Rural Sociology), Political Science, History, Psychology, Social Science, and Geography
Biological Sciences	8	10	0	4	Either Botany 2 or Zoology 2, additional hours from Physiology or Pathology (animal or plant), Biochemistry, Bacteriology, Genetics, Entomology, Mycology, Botany, or Zoology
Mathematics	0	4	0	0	Mathematics 5
Physical Science and Mathematics	4	12*	0	0	Mathematics, Chemistry, Physics, Geology, Surveying
Statistics	3	0	3	3	Statistics 101, or other
Accounting	0	0	4	0	
Business and Economics	0	0	12	0	A minimum of 9 hr. in the College of Commerce. The remaining 3 hr. from either Commerce or Agricultural Economics
Agriculture**	30	20	30	31	Courses in the College of Agriculture, Forestry, and Home Economics. Business majors must have a minimum of 9 hr. of Agricultural Economics
Education and Agricultural Education	0	0	0	21	Minimum hours required for Teacher Certification in Vocational Agriculture
Foreign Language	0	6	0	0	
Physical Education, Military or Air Science, or Free Electives	10	10	10	10	
Free Electives	16	12	12	0	
TOTAL	83	83	83	84	

*Chem. 233, Organic Chemistry, is required in the Basic Science Option. Courses submitted to meet the requirement in one subject-matter area cannot be used to satisfy requirements in another subject-matter area.

**Courses of Instruction in Agriculture may be found beginning on page 111.

NOTE: A student may pursue a curriculum option within a subject-matter area or a general course of study within each of the four curriculum options.

AGRICULTURE CURRICULUM

(For Students Beginning 1961-62 and Thereafter)

FRESHMAN YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
*Agr. 11	1	*Agr. 12	1
*English 1	3	*English 2	3
*Bot. 1	4	Bot. 2 or Zool. 2 (not required for Business majors)†	4
*Zool. 1	4		
*Math. 3	3	*Math. 4	3
Phys. Ed. 1	1	*Chem. 1	4
Mil. or Air Sci. 1	2	Phys. Ed. 2	1
		Mil. or Air Sci. 2	2
	18		18

SOPHOMORE YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
*Econ. 1	3	*Agr. Econ. 103	3
*Chem. 2	4	*Agron. 2	3
*Agr. Eng. 10	3	*Agr. 52	4
*Agr. 51	4	Elective (Communications)	3
*Speech 11	3	Elective (Humanities and Social Sciences)	3
Mil or Air Sci. 3	2	Mil. or Air Sci. 4	2
	19		18

JUNIOR YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
*Physics 1	4	*Physics 2	4

*Courses marked with an asterisk are required for all students in Agriculture, and should be completed satisfactorily before reaching fourth-year status of 100 hours. Courses within this category not completed before the student attains fourth-year status still must be satisfactorily completed but the hours will not then count towards the total needed for graduation. Exceptional cases will be handled by the Dean.

†Business majors may elect a course in Humanities and Social Sciences.

It may be necessary for some students to take English 0 and Mathematics 2. Such changes in the curriculum schedule may be made with only slight reorganization.

Students selecting a major requiring only one course in Zoology or one course in Botany may take Vertebrate Zoology (Zool. 2) and Structure and Function of Seed Plants (Bot. 1). Either Evolution of the Plant Kingdom (Bot. 2), or Invertebrate Zoology (Zool. 1), may be taken to fulfill the requirements in those majors requiring additional credit in biological sciences.

In addition to the curriculum schedule, the student in his junior year must take additional courses in various subject-matter areas to qualify for the Bachelor's Degree in one of four options in Agriculture.

CREDIT HOURS REQUIRED IN EACH OPTION

APPLIED SCIENCE

Subject-Matter Area	*Number of Hours Required*
Agriculture	30
Humanities and Social Sciences	6
Biological Sciences	4
Physical Sciences	4
Statistics	3
Free Electives	16

BASIC SCIENCE

Agriculture	20
Humanities and Social Sciences	3
Biological Sciences	6
Physical Sciences and Mathematics	16*
Foreign Language	6
Free Electives	12

*Math. 5, Analytical Geometry, and Chem. 233, Organic Chemistry, must be among these courses.

BUSINESS

Agriculture	30**
Humanities and Social Sciences	3
Statistics	3
Accounting	4
Business	12†
Free Electives	12

**At least 9 hours must be courses in Agricultural Economics.

†At least 9 hours must be courses taken in the College of Commerce. The remaining 3 may be taken either in Commerce or Agricultural Economics.

EDUCATION

Agriculture	31
Humanities and Social Sciences	10
Statistics	3
Education	21‡

‡Minimum hours required for Teacher Certification in Vocational Agriculture.

VETERINARY MEDICINE

A contract arrangement with Ohio and Oklahoma State universities provides an opportunity for qualified students to study veterinary medicine. Up to four students each year may be accepted by each University under this arrangement. See page 109.

Suggested courses to be selected within the various subject-matter areas are:

Agriculture: Courses in the College of Agriculture, Forestry, and Home Economics.

Communications: From advanced courses in written and spoken English, Literature, and Journalism.

Humanities and Social Sciences: Humanities, Music, Art, Philosophy, Logic, Sociology including Rural Sociology, Political Science, History, Psychology, Social Science, and Geography.

Biological Sciences: Physiology or Pathology (animal or plant), Biochemistry, Bacteriology, Genetics, Entomology, Mycology, Botany, and Zoology.

Physical Sciences and Mathematics: Mathematics, Chemistry, Physics, Geology, and Surveying.

Statistics: Statistics 101, any course.

GRADUATE WORK

Graduate work leading to the Master of Science Degree is offered in all branches of Agriculture and in Home Economics. Courses leading to the degree of Doctor of Philosophy are offered in the departments of Plant Pathology, Agronomy and Genetics, and Agricultural Biochemistry and Nutrition. For those students in agriculture and home economics who wish additional training beyond the baccalaureate degree, but who desire breadth of training rather than specialization in one subject-matter field, the degrees of Master of Agriculture and Master of Home Economics are available. The student who plans to pursue graduate work should consult the *Announcements* of the Graduate School and of the College of Agriculture, Forestry, and Home Economics.

Advancement in any of the professional fields is dependent upon graduate study, and the student desiring to pursue such work should plan to continue in graduate study upon completion of the undergraduate curriculum. A limited number of graduate assistantships which permit half-time devotion to study are available in the Division of Agriculture and the Agricultural Experiment Station.

Teachers of vocational agriculture may combine graduate work in Agriculture and Education by taking 16 to 20 hours in Agriculture and 10 to 14 hours in Education to fulfill requirements for the M.S. Degree.

Division of Agriculture

(For Students Enrolled Before Summer, 1961)

Students enrolled before the summer of 1961 have established their courses of study for their baccalaureate. These may be continued as planned and as described on the following pages. Students desiring to modify their courses of study to correspond more closely with the New Curriculum should consult their adviser or the Dean of the College.

Bachelor of Science in Agriculture

The curriculum leading to the degree of Bachelor of Science in Agriculture is designed to provide a broad and well-rounded training in the general field of agriculture so that the graduate may be prepared for occupations requiring such general knowledge, and may have the necessary foundation for such specialization as he may elect to pursue.

The requirements for the degree of Bachelor of Science in Agriculture are:

1. Courses required of all qualifying for this degree.
2. Courses to be taken in the field of the student's major interest.
3. Free electives sufficient to bring the total number of credits to 144 semester hours.
4. A grade-point average of not less than two points per semester hour.

All candidates for the degree must take the following courses:
Biology: Biol. 1 (4 hr.) and Biol. 2 (4 hr.).
Chemistry: Chem. 1 and 2 (8 hr.).
English: English 1 and 2 and English 18 (9 hr.).
Economics: Agr. Econ. 102 (3 hr.).
Mathematics: Math. 2 (3 hr.).
History: Hist. 2 (3 hr.).
Military: Military or Air Science 1, 2, 3, and 4 (men) (8 hr.).
Physical Education: Phys. Ed. 1 and 2 (men) (2 hr.); women (4 hr.).
Physics: Physics 1 and 2 (8 hr.). (Agricultural Education students not included).
Political Science: Pol. Sci. 101 (3 hr.). (Agricultural Education students not included).

In addition to the above required courses, each student is required to take the courses under the curriculum. At least 20 hours given in the department in which the student is majoring are required.

After requirements have been met, electives may be chosen without restriction as to college or department, with the approval of the adviser. Required and elective hours taken in the College of Agriculture, however, must total at least 60. Provision is made for upper-division students who may wish to elect certain lower-division subjects such as languages.

CURRICULA

Students who wish to specialize may select majors in Agricultural Economics, Agricultural Mechanics, Agronomy and Genetics, Animal Science, Dairy Science, Dairy Foods, Horticulture, Landscaping, Poultry Science, and Agricultural Education. Students desiring a more general knowledge of Agriculture, particularly those who expect to farm for themselves or go into Extension work, may pursue a curriculum in General Agriculture.

The following curricula indicate course requirements in each of the majors.

MAJOR IN AGRICULTURAL ECONOMICS

Degree: Bachelor of Science in Agriculture

This curriculum is designed principally to prepare students for advanced study in the field. Students who are interested in agricultural economics but plan to seek employment without graduate study are advised to major in General Agriculture and elect agricultural economics courses.

Freshman students are referred to NEW CURRICULUM on Page 100.

THIRD YEAR				FOURTH YEAR			
First Sem.	*Hr.*	*Second Sem.*	*Hr.*	*First Sem.*	*Hr.*	*Second Sem.*	*Hr.*
Agr. Econ. 104	3	*Hist. 2	3	Philos. 106	3	Agr. Econ. 200	3
An. & V.S. 101	3	Rural Soc. 105	3	Electives	15	Agr. Econ. 271	2
*Pol. Sci. 101	3	Hort. 1 or 2	3			Electives	12
Electives	9	Electives	9				
	18		18		18		17

*Required in all curricula.

Select electives in accordance with the following outline.

GROUP A.

1. Elect not less than 2 hr. from:
   Agr. Econ. 206, 230.
2. Elect not less than 3 nor more than 6 hr. from:
   Agr. Mech. 152, 153, 170.
3. Elect not less than 3 nor more than 6 hr. from:
   Agron. 205, 210, 254; Genetics 111, 221, 224.
4. Elect not less than 6 nor more than 12 hr. from:
   An. & V.S. 102, 141, 142, 143, 167, 225; Dairy Sci. 12, 107, 123, 222; Poult. Sci. 103.
5. Elect not more than 3 hr. from:
   Hort. 1 or 2, 206, 208.
6. Elect not less than 4 nor more than 6 hr. from:
   Bact. 141; Entom. 202, 203; Pl. Path. 201, 206, 208.
7. Elect not less than 3 hr. from:
   For. 183; Agr. Ed. 134.

GROUP B.

1. Elect 9 hr. from Econ. 111, 119, 125, 235, 241.

GROUP C.

1. Elect 3 hr. from Psych. 1, Pol. Sci. 232; Soc. 102, 229; Hist. 182.

FREE ELECTIVES: 11 hr.

MAJOR IN AGRICULTURAL EDUCATION

Degree: Bachelor of Science in Agriculture

The West Virginia Board of Education has set up definite requirements applicable to all college graduates desiring to teach in West Virginia high schools. These requirements specify the kind and number of various science and agricultural courses as well as courses in professional education subjects, also certain general education and cultural subjects, all of which are necessary to qualify graduates for certification. This curriculum is designed to prepare students for a teaching career in the field of vocational agriculture, with provisions for teaching biological science as a second field. To meet the State requirements for teaching vocational agriculture, a B.S. Degree in Agriculture is required. This curriculum satisfies the requirements for that degree.

Freshman students are referred to NEW CURRICULUM on Page 100.

THIRD YEAR				FOURTH YEAR			
First Sem.	*Hr.*	*Second Sem.*	*Hr.*	*First Sem.*	*Hr.*	*Second Sem.*	*Hr.*
Agron. 2	3-4	For. 183	3	Agr. Econ. 104	3	Educ. 120	4
Agr. Mech. 152	3	Educ. 106	3	Educ. 160	3	Educ. 124	6
An. & V.S. 101	3	Agr. Mech. 153	3	Educ. 276	2	Agr. Educ. 118	2
*Agr. Econ. 102	3	Bact. 141	4	Health Ed. 101	2	Electives	4-5
Educ. 105	3	Art 30 or 130	2	An. & V.S.	3-4		
Music 10	2	Electives	5	Agr. Mech. (Elective)	3		
				Electives	2		
	18-19		20		18-19		16-17

*Required in all curricula.

NOTE: Nine hours of electives must be in Agriculture to meet the requirements for the B.S. in Agriculture degree. The remaining three hours are free electives.

MAJOR IN AGRICULTURAL MECHANICS

Degree: Bachelor of Science in Agriculture

This curriculum is intended for agricultural students who are interested in the production and primary processing of crops and livestock, in county agent and other extension work, in soil-conservation work, and in sales and other work which deals directly with farm people. To an increasing extent, the operations on the farm are being mechanized through use of power and machinery. Consequently, the student must have an acquaintance with machinery, power, electrical equipment, soil conservation, farm buildings, and other Agricultural Mechanics subjects that relate to production and processing. Such training is included in this curriculum.

Freshman students are referred to NEW CURRICULUM on Page 100.

THIRD YEAR				FOURTH YEAR			
First Sem.	*Hr.*	*Second Sem.*	*Hr.*	*First Sem.*	*Hr.*	*Second Sem.*	*Hr.*
Agr. Econ. 104	3	Agr. Sci. 52	4	Agr. Mech. 275	3	Agr. Mech. 253	3
Agron. 2	3-4	Hort. 208	2	Agr. Mech. 200	2	Agr. Mech. 259	3
*Hist. 2	3	I. E. 7	1	Electives	12	Agr. Mech. 270	3
Pl. Path. 201	4	*Pol. Sci. 101	3			Electives	10
Agr. Mech. 152	3	Electives	8				
Electives	3						
	19-20		18		17		19

*Required in all curricula.

MAJOR IN AGRONOMY AND GENETICS

Degree: Bachelor of Science in Agriculture

This curriculum is suggested for students who plan to enter into work in some phase of Agronomy or Soil Conservation upon their graduation. Students intending to take graduate work to qualify for research or teaching positions in Agronomy or Genetics should elect the Agricultural Science Curriculum and elect at least 20 hours in the field of Agronomy and Genetics.

Freshman students are referred to NEW CURRICULUM on Page 100.

THIRD YEAR				FOURTH YEAR			
First Sem.	*Hr.*	*Second Sem.*	*Hr.*	*First Sem.*	*Hr.*	*Second Sem.*	*Hr.*
Agr. Econ. 104	3	Botany 161	4	Agr. Econ. 206	3	Agr. Mech. 253	3
Agron. 2	3-4	Entom. 202	4	Agron. 210	3	Agron. 254	4
An. & V.S. 101	3	*Hist. 2	3	Gen. 221	3	Electives	10
Hort. 2 or 206	3	Electives	8	*Pol. Sci. 101	3		
Pl. Path. 201	4			Electives	7		
Electives	2						
	18-19		19		19		17

*Required in all curricula.

Suggested Electives: Agr. Econ. 271; Agr. Mech. 151, 175; Agron. 212, 216, 230, 251, 252; An. & V.S. 141, 162; Dairy Sci. 11; Entom. 203; Forestry 183; Genetics 220, 222; Geol. 1, 2; Pl. Path. 202.

MAJOR IN ANIMAL SCIENCE

Degree: *Bachelor of Science in Agriculture*

The Animal Science curriculum is outlined to give students sufficient course work in the fundamental sciences, and adequate course work in other fields of agriculture to balance their knowledge of agriculture as a whole. The Animal Science courses required and taken as electives will give students a good foundation to continue graduate work in their chosen major, or to be employed in special lines of work open to students majoring in this field. The exact course load for each student is arranged with his adviser in accord with the student's background and ability.

Freshman students are referred to NEW CURRICULUM on Page 100.

THIRD YEAR				FOURTH YEAR			
First Sem.	*Hr.*	*Second Sem.*	*Hr.*	*First Sem.*	*Hr.*	*Second Sem.*	*Hr.*
An. & V.S. 101	3	An. & V.S. 225	3	An. & V.S. 102	3	An. & V.S. 199	1
An. & V.S. 167	3	*Pol. Sci. 101	3	Genetics 221	3	Electives	17
Agron. 2	3-4	*Hist. 2	3	Electives	12		
Electives	9	Electives	10				
	18-19		19		18		18

*Required in all curricula.

Suggested Electives: Agr. Biochem. 290, 291 (3 hr. ea.); Agr. Econ. 104, 131 (3 hr. ea.); Agr. Educ. 134 (2 hr.); Agron. 210 (3 hr.), 254 (4 hr.); An. & V.S. 138, 142, (2 hr. ea.), 141, 142, 162, 202, 226 (3 hr. ea.); Dairy Sci. 12 (3 hr.); Entom. 202 (4 hr.); For. 183 (3 hr.); Hort. 2 (3 hr.); Hist. 182 (3 hr.); Agr. Mech. 153, 175 (3 hr. ea.); An. & V.S. 206 (3 hr.); Pl. Path. 201 (4 hr.); Speech 11 (3 hr.); Zool. 271 (4 hr.).

MAJOR IN DAIRY SCIENCE

Degree: *Bachelor of Science in Agriculture*

The curriculum in Dairy Science is designed to give the student training in the areas of breeding, nutrition, physiology, and management of dairy cattle. Students completing this curriculum should be qualified to operate successfully their own farms or to serve as herdsmen, farm managers, fieldmen, county cooperative extension agents, milk sanitarians, etc., or to continue in the education field.

Freshman students are referred to NEW CURRICULUM on Page 100.

THIRD YEAR				FOURTH YEAR			
First Sem.	*Hr.*	*Second Sem.*	*Hr.*	*First Sem.*	*Hr.*	*Second Sem.*	*Hr.*
Agron. 2	3-4	Agron. 254	4	D. S. 107	3	D. S. 222	4
*Agr. Econ. 102	3	D. S. 123	2	D. S. 221	3	Electives	15
D. S. 101	3	*Hist. 2	3	Electives	13		
An. & V.S. 102	3	Speech 11	3				
Gen. 11 or 221	2-3	Electives	6				
*Pol. Sci. 101	3						
	18-19		18		19		19

*Required in all curricula.

Suggested Electives: P. S. 1; Agron. 205, 210; An. & V.S. 167; Agr. Econ. 131, 230, 235; Agr. Mech. 153, 159, 170, 175; Dairy Bact. 246; D. S. 103, 195, 225, 226, 227; Lib. Sci. 1; Agr. Biochem. 218.

MAJOR IN DAIRY FOODS

Degree: *Bachelor of Science in Agriculture*

The curriculum in Dairy Foods is designed for those students planning to enter the dairy industry as plant men, fieldmen, technicians, or to continue in the education field.

Freshman students are referred to NEW CURRICULUM on Page 100.

THIRD YEAR				FOURTH YEAR			
First Sem.	*Hr.*	*Second Sem.*	*Hr.*	*First Sem.*	*Hr.*	*Second Sem.*	*Hr.*
D. S. 102	3	Agr. Econ. 235	2	D. S. 103	3	D. S. 104	3
*Agr. Econ. 102	3	D. S. 124	2	D. S. 107	3	D. S. 204	4
Dairy Bact. 246	4	*Hist. 2	3	Electives	11	D. S. 222	4
*Pol. Sci. 101	3	Speech 11	3			Electives	7
Electives	5	Agr. Biochem. 218	3				
		Electives	6				
	18		19		17		18

*Required in all curricula.

Suggested Electives: P. S. 1; Gen. 111 or 221; An. & V.S. 11, 167; Agr. Mech. 170; Chem. 105, 106; Agr. Econ. 104, 230; Agr. Biochem. 101, 103; Accounting 1, 2; D.S. 101, 195, 221; Mgmt. 111, 112, 216; Mkt. 111, 112; Econ. 115; Finance 111.

MAJOR IN GENERAL AGRICULTURE

Degree: *Bachelor of Science in Agriculture*

The General Agriculture curriculum is designed to give the student expansive general training in the field of farming. It combines the fundamental sciences, basic arts, and practical applications of agriculture, and offers excellent instruction for those interested in extension work and other employment requiring a broad basic knowledge of the whole field of agriculture.

Freshman students are referred to NEW CURRICULUM on Page 100.

THIRD YEAR				FOURTH YEAR			
First Sem.	*Hr.*	*Second Sem.*	*Hr.*	*First Sem.*	*Hr.*	*Second Sem.*	*Hr.*
*Agr. Econ. 102	3	Bact. 141	4	Agr. Econ. elect.	3	Agr. Econ. elect.	3
Agron. 2	3-4	*Physics 2	4	Agr. Econ. elect.	3	Agr. Econ. elect.	3
An. & V.S. 101	3	Speech 11	3	An. & V.S. 102 or Pl. Path. 201	3-4	Entom. 202	4
*Physics 1	4	Pol. Sci. 101	3	Gen. 221	3	For. 183	3
Elective	3	Elective	4	Electives	6-7	Electives	5
	16-17		18		19		18

*Required in all curricula.

MAJOR IN HORTICULTURE

Degree: Bachelor of Science in Agriculture

The Horticulture curriculum in production of fruits, vegetables, and flowers has been designed to meet the current needs of students who desire to have their own commercial enterprise or a sound professional training for filling a position with an established organization. The low investment required for the production of small fruits, vegetables, bulb crops, and nursery stock presents unlimited opportunities for young men with a thorough horticultural training. Small areas of tillable land in West Virginia demand the use of an intensive type of agriculture, and frequently the greatest return can be realized through the use of horticultural crops. Local marketing of such crops is no problem in West Virginia, since the demand exceeds the supply.

Certain courses offered in Horticulture are designed to interest non-agricultural students who desire to use the subject matter for improving their daily living or hobby interest. These courses deal with home grounds beautification in Horticulture 129 and 229, home vegetable and fruit production in Horticulture 1 and 2, and propagation in Horticulture 204.

Freshman students are referred to NEW CURRICULUM on Page 100.

THIRD YEAR				FOURTH YEAR			
First Sem.	*Hr.*	*Second Sem.*	*Hr.*	*First Sem.*	*Hr.*	*Second Sem.*	*Hr.*
*Agr. Econ. 102	3	Entom. 202	4	Bot. 273	4	Agr. Mech. elect.	3
Hort. 229	3	*Hist. 2	3	Gen. 221	3	Agron. 210	3
Pl. Path. 201	4	Hort. 208	2	Hort. 151, 212, or 239	3	Hort. 204, or 232 and 234	3
*Pol. Sci. 101	3	Pl. Path. 204, 205, or 206	2	Electives	8	Electives	9
Hort. 206	3	Electives	7				
Electives	3						
	19		18		18		18

*Required in all curricula.

Suggested Electives: Agr. Econ. 104, 131; Agr. Mech. 152; Agron. 216, 230, 251; Art 11, 12, 30; Bot. 161, 218, 227, 231, 235, 266; Geol. 1; Bus. Adm. 245; Econ. 111; Entom. 203; For. 183; Hort. 140; Languages; Lib. Sci. 1; Math. 4; Speech 11.

MAJOR IN ORNAMENTAL HORTICULTURE

Degree: Bachelor of Science in Agriculture

The field of ornamental horticulture is broad, for it includes the work of nurserymen and landscape operators as well as greenhousemen and florists, both in production and merchandising. The demand for trained personnel in ornamental horticulture greatly exceeds the present supply. Because of this, opportunities for employment of graduates are increasing.

The first two years are devoted to a broad, basic foundation as preparation for specialization during the junior and senior years. Emphasis is placed on a sound understanding of the basic principles involved. Because of the breadth of this field, one summer's work or practice with a commercial concern which emphasizes sound nursery practices, garden construction, and maintenance is desirable.

Students with a city background will fit into this field much more readily than in some other phases of agriculture.

Freshman students are referred to NEW CURRICULUM on Page 100.

THIRD YEAR				FOURTH YEAR			
First Sem.	*Hr.*	*Second Sem.*	*Hr.*	*First Sem.*	*Hr.*	*Second Sem.*	*Hr.*
*Agr. Econ. 102	3	Agr. Mech.		Bot. 273	4	*Physics 2	4
Agron. 2	3-4	(Elec.)	3	Gen. 221	3	Pl. Path. 205	2
Hort. 151	3	Entom. 202	4	Hort. 239	3	*Pol. Sci. 101	3
Hort. 229	3	Hort. 204	3	*Physics 1	4	Electives	9
Pl. Path. 201	4	Hort. 208	2	Electives	4		
Electives	2	Electives	7				
	18-19		19		18		18

*Required in all curricula.

Suggested Electives: Agr. Econ. 104, 131; Agr. Mech. 152, 275; Agron. 1, 210 216, 230, 251; Art 12, 30; Geol. 1; Bot. 161, 218, 227, 231, 235, 266; Econ. 111; Entom. 203; For. 183; Hort. 206; Lib. Sci. 1; Speech 11; Languages; Accounting 1.

MAJOR IN POULTRY SCIENCE

Degree: *Bachelor of Science in Agriculture*

The curriculum in Poultry Science is designed to give the student a thorough knowledge of subject matter necessary for poultry raising, poultry improvement work, management of a poultry breeding farm, and as a basis for graduate training for teaching and research in Poultry Science. Students may select electives to meet their special needs.

Freshman students are referred to NEW CURRICULUM on Page 100.

THIRD YEAR				FOURTH YEAR			
First Sem.	*Hr.*	*Second Sem.*	*Hr.*	*First Sem.*	*Hr.*	*Second Sem.*	*Hr.*
Gen. 221	3	*Hist. 2	3	P. S. 108	1	P. S. 109	1
*Pol. Sci. 101	3	P. S. 103	3	P. S. 201	3	P. S. 195	1
An. & V.S. 102	3	Electives	12	P. S. 212	3	An. & V.S. 206	3
P. S. 106	2			An. & V.S. 100	3	Electives	13
Electives	7			Electives	8		
	18		18		18		18

*Required in all curricula.

Electives: A minimum of 3 hr. each is required in Agronomy, Animal Science, and Horticulture.

Suggested Electives: Agr. Econ. 104, 131; An. & V.S. 11, 101, 167, 225; Agron. 2; D. S. 11, 226; Hort. 1; Entom. 202; P. S. 105, 110, 213; Speech 1; Agr. Mech. 159; 170; Agr. Biochem. 201.

BACHELOR OF SCIENCE

The curriculum leading to the degree of Bachelor of Science is designed for those who are interested in teaching agricultural science and especially interested in research.

MAJOR IN AGRICULTURAL SCIENCE

Degree: Bachelor of Science

Students who expect to do graduate work in preparation for teaching agricultural science in colleges and universities or for research work in experiment stations, or for other work in specialized fields of basic agricultural science, may register for the curriculum in Agricultural Science. Only students who have a high-school record above average and who are capable of maintaining a scholarship average of "B" or above should follow this curriculum. Success in graduate work will depend upon better-than-average undergraduate scholarship, and such undergraduate work must include adequate preparation in biology, mathematics, English, and foreign languages. The degree of Bachelor of Science is conferred upon the satisfactory completion of this curriculum. At least 45 hours of courses in the College of Agriculture, Forestry, and Home Economics are required.

Freshman students are referred to NEW CURRICULUM on Page 100.

THIRD YEAR				FOURTH YEAR			
First Sem.	*Hr.*	*Second Sem.*	*Hr.*	*First Sem.*	*Hr.*	*Second Sem.*	*Hr.*
*Agr. Econ. 102	3	†German, French		Electives	18	Electives	18-19
Chem. 233	5	or Spanish	3				
†German, French		*Physics 2	4				
or Spanish	3	Pol. Sci. 101	3				
*Physics 1	4	Electives	8				
Electives	3						
	18		18		18		18-19

*Required in all curricula.
†Take in junior or senior year.

MAJOR IN PRE-VETERINARY MEDICINE

This course of study is designed to meet the requirements for the Colleges of Veterinary Medicine of Ohio State University and Oklahoma State University. Each of these colleges annually reserve four places for West Virginia students. Summer courses are not required, but if work is not taken in the summer, three years of study will be needed to meet requirements for both schools. Many students will find it advantageous to obtain a degree in Agriculture before going to a veterinary school. The courses listed in the Pre-Veterinary Medicine Curriculum may be used for credit toward a degree in Agriculture.

FIRST YEAR				SECOND YEAR			
First Sem.	*Hr.*	*Second Sem.*	*Hr.*	*First Sem.*	*Hr.*	*Second Sem.*	*Hr.*
*English 1	3	*English 2	3	*Pol. Sci. 101	3	Speech 11	3
*Chem. 1	4	Chem. 2	4	An. & V.S. 101	3	Gen. 111 and 112	3
Zool. 1	4	Zool. 2	4	Chem. 131	4	Hist. 52 or 53	3
Bot. 1	4	Math. 2 or 3	3	*Econ. 1	3	Ag. Biochem. 101	3
*Mil. or Air Sci. 1	2	*Mil or Air Sci. 2	2	*Mil. or Air Sci. 3	2	*Mil. or Air Sci. 4	2
*Phys. Ed.	1	*Phys. Ed. 2	1	Agr. 51	4	Electives	3
Agr. 11	1	Agr. 12	1				
	19		18		19		17

SUMMER SESSION

First Term	*Hr.*	*Second Term*	*Hr.*
*Physics 1	4	*Physics 2	4
Elective	3	Elective	3
	7		7

*Required in all curricula.

BACHELOR OF SCIENCE IN AGRICULTURAL ENGINEERING

Degree: Bachelor of Science in Agricultural Engineering.

Agricultural Engineering is the application of engineering principles to agriculture. Success in the application of these engineering fundamentals to the agricultural industry requires knowledge of both biological and physical sciences. The purpose of the course is to give the student who completes it general training in agriculture and in engineering fundamentals. Considerable stress is given to the basic requirements of animal and plant life on the farm which affect engineering practices, but greater emphasis is made on a thorough knowledge of those underlying principles and methods which are the foundation of all engineering professions.

Although the curriculum gives no opportunity for specialization, Agricultural Enginering is made up of four major fields. These are Farm Power and Machinery, Farm Structures, Soil and Water Conservation, and Electric Power and Processing.

Students preparing to take Agricultural Engineering should present for entrance as many units as possible in mathematics, chemistry, and physics.

Some of the organizations and industries employing agricultural engineers are electric power companies and co-operatives; farm machinery manufacturers and distributors; manufacturers and distributors of building materials; oil companies; electric equipment and other suppliers for farm utilities; trust companies; farm management agencies; federal agencies such as Soil Conservation Service, U. S. Department of Agriculture, Federal Land Bank, and Indian Service; colleges and universities; Army and Navy, and foreign governments.

Opportunities for employment are numerous. At no time since the establishment of the profession has it been crowded, and the outlook is good for a continuance of this situation. With agriculture becoming increasingly mechanized, the demand for agricultural engineers is increasing and should continue to increase. New opportunities arise as mechanization continues. Starting salaries are in line with salaries in other branches of engineering.

CURRICULUM IN AGRICULTURAL ENGINEERING

FIRST YEAR				SECOND YEAR			
First Sem.	*Hr.*	*Second Sem.*	*Hr.*	*First Sem.*	*Hr.*	*Second Sem.*	*Hr.*
*Chem. 1	4	*Chem. 2	4	*Agr. Econ. 102	3	C.E. 1	2
*English 1	3	*English 2	3	Agr. Econ. 10	3	Math. 108	4
G. 1	Cr.	Hist. 53	3	Math. 107	4	T.A.M. 101	3
Math. 3	3	Math. 5	4	M.E. 39	2	*Mil. or Air Sci. 4	2
Math. 4	3	M.E. 26	2	*Mil. or Air Sci. 3	2	Physics 112	5
M.E. 20	3	*Mil. or Air Sci. 2	2	Physics 111	5	English 126	3
*Mil. or Air Sci. 1	2	*Phys. Ed. 2	1				
*Phys. Ed. 1	1						
	19		19		19		19

THIRD YEAR				FOURTH YEAR			
First Sem.	*Hr.*	*Second Sem.*	*Hr.*	*First Sem.*	*Hr.*	*Second Sem.*	*Hr.*
Agr. Econ. 104	3	Agr. Eng. 190	3	Agr. Eng. 140	3	Agr. Sci. 52	4
Agron. 2	3-4	C.E. 115	3	Agr. Eng. 200	1	Agr. Eng. 190	3
E. E. 105	4	E.E. 205	4	Agr. Eng. 230	4	Agr. Eng. 110	3
T.A.M. 102	3	I.E. 100	3	Elect. (Agr.)	4	Elect. (Agr.)	3
T.A.M. 104	3	M.E. 121	3	M.E. 113	3	Elect. (Eng'g.)	3
		T.A.M. 103	3	Speech 11	3	Elect. (Non-Tch.)	3
						G. 100	Cr.
	16-17		19		18		19

*Required in all curricula.

Non-Technical Electives may be selected from Rural Soc. 105; Pol. Sci. 101; Hist. 2, 52; Psych. 1; Phil. 4; or Sociol. 206.

COURSES OF INSTRUCTION IN AGRICULTURE

Only the technical courses offered primarily for students in Agriculture are described here. For detailed description of other courses listed as required or elective in the agricultural curriculum, see the announcement of courses in the College of Arts and Sciences or in other colleges.

Admission to any advanced elective course is conditional upon the consent of the instructor.

ASSIGNED TOPICS

In order to be eligible to take courses 180, 181, Assigned Topics, the student must:

1. Have completed 100 hours of work and have a grade-point average of 2.5 or above.

2. Present, in advance, a written outline of the work to be done as an assigned topic. This outline must be acceptable to the Dean of the College and the department chairman concerned.

Item 1 above does not apply to special students.

A student may not receive credit toward graduation for more than 4 hours of assigned topics.

AGRICULTURE

Dean Nesius, Assistant Dean Burger; Professors Dunbar and Welch; Assistant Professor Watts, and Staff.

AGRICULTURE

Undergraduate Division

11. Professions in Agriculture. I. 1 hr. Survey of the subject-matter disciplines and of the career opportunities available to students in the Division of Agriculture. Included ordinarily is a trip to an outstanding agribusiness area.

12. Professions in Agriculture. II. 1 hr. Continuation of Agr. 11. Included ordinarily is a trip to demonstrate good farm management.

51. Principles of Animal Science. I. 4 hr. A comparative study of the production of meat, milk, eggs, and wool. Nutrition, physiology, genetics, hygiene, physical environment, and economics are discussed as bases for sound managerial decisions.

52. Principles of Plant Science. II. 4 hr. PR: Botany 1. A basic course covering the nature, history, classification, role, distribution, structure and function, reproduction, improvement, culture, pests, storage and handling, production and marketing, and utilization of agricultural plants.

Graduate Division

360. Problem Report for the Degree of Master of Agriculture. I, II, S. 1-3 hr.

STATISTICS

Undergraduate Division

101. Statistical Concepts. II. 3 hr. An elementary course designed to thoroughly familiarize the student with the basic concepts of the distribution of a variable, sampling error, probabality, and statistical inference. This course emphasizes the bases for statistical reasoning rather than the mechanics of a number of statistical techniques.

211. Statistical Methods. I. 3 hr. Statistical concepts and methods applied to data in biological and other fields. Measures of centrality and dispersion; normal distribution; population and sampling; estimation and tests of hypotheses concerning means and variances, analysis of variance, regression and correlation; enumeration statistics.

212. Advanced Statistical Methods. II. 3 hr. PR: Statistics 211 or equivalent. Continuation of Statistics 211. Statistical concepts and methods. Analysis of variance with two or more variables; factorial comparisons; covariance analysis; multiple regression and correlation; and nonlinear regression.

Graduate Division

320, 321, 322, 323. Special Topics. I, II, S. 2-4 hr. PR: Consent. Advanced study in such topics as analysis of non-orthogonal data, estimation of variance and covariance components, transformations of anormality of distribution, efficiency of experiments, and non-parametric methods of estimation.

AGRICULTURAL BIOCHEMISTRY AND NUTRITION

Professors Lewis and McLaren; Associate Professor Luchsinger; Assistant Professor Reid.

Undergraduate Division

101. Introductory Plant and Animal Biochemistry. II. 3 hr. PR: Chem. 1 and 2, Chem 31 or 131 or equivalent. An introductory course of the biochemistry of carbohydrates, proteins, lipids, vitamins, enzymes, minerals and hormones of plants and animals.

180, 181. Assigned Topics. I, II. 1-4 hr. per semester.

202. Introductory Biochemistry. II. 3 hr. PR: General chemistry, organic chemistry. Open to Education majors and master of agriculture candidates only.

218. Dairy Chemistry. II. 3 hr. PR: Organic chemistry, (quantitative analysis desirable). Analysis of dairy products. Offered in 1962-63 and alternate years.

290. General Biochemistry. I. 3 hr. PR: Chemistry 238, quantitative analysis and consent. A general course in biochemistry primarily intended to meet the needs of graduate students.

291. General Biochemistry. II. 3 hr. PR: Agr. Biochem. 290 or consent. A continuation of Agr. Biochem. 290.

293. Laboratory Experiments in Biochemistry. I. 2 hr. PR: Agr. Biochem. 290 or concurrent registration. Experiments to demonstrate certain phases of the subject matter covered in General Biochemistry. Offered in 1962-63 and alternate years.

Graduate Division

301. Enzymes. I. 3 hr. PR: Agr. Biochem. 290 or consent. A general survey of the chemistry of enzymes for the advanced student. Offered in 1962-63 and every third year.

303. Biochemistry of Carbohydrates. I. 2 hr. PR: Agr. Biochem. 291. The structure, properties and metabolism of sugars and polysaccharides. Offered in 1963-64 and every third year.

305. Biochemistry of the Lipids. II. 2 hr. PR: Agr. Biochem. 290 or consent. A consideration of the composition, analysis, processing, and metabolism of fats and other lipids. For advanced students. Offered in 1964-65 and every third year.

306. Nutrition Laboratory Methods. I. 3 hr. PR: Agr. Biochem. 291. Quantitative methods in animal nutrition research. Offered 1964-65 and every third year.

307. Nutritional Biochemistry. I. 3 hr. PR: Agr. Biochem. 291. The biochemistry of protein and amino acid nutrition, and non-protein nitrogen metabolism in the ruminant. Offered 1962-63 and every third year.

Chemistry and biochemistry courses are also offered in the College of Arts and Sciences and in the School of Medicine.

310. Nutrition and Physiology of the Ruminant. II. 3 hr. PR: Animal Science 100, 101; Agr. Biochem. 190. A study of the nutrition and physiological processes peculiar to the ruminant animal. Offered 1963-64 and alternate years.

320, 321, 322, 323. Special Topics. I, II, S. 2-4 hr. Advanced training will be provided, through literature surveys and special research projects, in such areas as biochemical techniques, animal nutrition and metabolism.

325. Advanced Biochemistry Laboratory. I. 2 hr. PR: Agr. Biochem. 290 or concurrent registration. Methods and techniques in the study of proteins and related subjects, including principles of fractionation, electrophoresis, ion exchange, lyophilization, microbiological analysis, and other applicable techniques. Offered in 1963-64 and alternate years.

326. Advanced Biochemistry Laboratory. II. 2 hr. PR: Agr. Biochem. 290. Special techniques used in the study of lipids, enzymes, and carbohydrates, such as distillation at low pressure, low temperature fractional crystallization, counter current distribution, purification of enzymes, kinetic studies, and glass blowing. Offered in 1963-64 and alternate years.

330. Mineral Metabolism. II. 3 hr. PR: Agr. Biochem. 291 or consent. A study of the mineral requirements of animals covering metabolism, digestion, absorption, excretion, and genetic influence accompanied by laboratory mineral study methods. Offered 1962-63 and alternate years.

350, 351, 352, 353. Seminar. I, II. 1 hr. per semester.

380, 381, 382, 383. Research. I, II, S. 1-6 hr. per semester.

AGRICULTURAL ECONOMICS AND RURAL SOCIOLOGY

Professors Evans, Armentrout, Clarke, and Toben; Associate Professors Barr and Sizer.

AGRICULTURAL ECONOMICS

Undergraduate Division

102. Agricultural Economics. I. 3 hr. Principles with application to agriculture. This course will be discontinued after the first semester, 1962-63.

103. Agricultural Economics. II. 3 hr. Application of economic principles to agriculture and agri-business firms. Agriculture's place in the state and national economies and its position in the international sphere. This course will be taught for the first time beginning with the second semester, 1962-63.

104. Farm Management. I. 3 hr. PR: Agr. Econ 102 or 103. Types and systems of farming; considerations in starting farming; use of records in solving farm problems; land tenure and leases; production for family use.

110. Agri-business Accounting. I. 4 hr. Accounting for business managers who do not intend to become accountants. A brief coverage of terminology and methodology; decisions in accounting as directed by executives; interpretations and values from accounts and accounting statements. Visits to business firms required.

131. Marketing Agricultural Products. II. 3 hr. PR: Agr. Econ. 102 or 103. Principles and practices. Tour of market facilities in Pittsburgh area required.

180, 181. Assigned Topics. I and II. 1-4 hr. per semester.

200. Land Economics. II. 3 hr. Classification, development, tenure, use, conservation, valuation and taxation of rural, urban, mineral, forest, water, and recreational land resources.

206. Farm Planning. I. 3 hr. PR: Senior standing. Principal factors influencing returns on farms; planning use of labor, soil, crops, livestock, buildings and equipment. Farm visits required.

230. Cooperative Marketing. II. 2-3 hr. PR: Agr. Econ. 102 or 103. Principles and practices of cooperation as applied to marketing of agricultural products and purchasing of farm supplies. Offered in 1963-64 and alternate years.

235. Marketing Dairy Products. II. 2 hr. PR: Agr. Econ. 102 or 103. Milk-marketing policies and practices, including federal milk-market orders. Offered in 1962-63 and alternate years

240. Agricultural Prices. II. 3 hr. An analysis of the price-making forces which operate in the market places for the major agricultural commodities.

261. Agri-business Finance. I. 3 hr. Credit needs of agricultural businesses; financing of farm and market-agency firms; and organization and operation of credit agencies which finance agricultural business firms.

271. Agricultural Policy. II. 2 hr. An examination of the economic aspects of government price programs, production and marketing controls, subsidies, parity, export and import policies, and other programs affecting agriculture. Offered in 1962-63 and alternate years.

Graduate Division

320, 321, 322, 323. Special Topics. I, II, S. 2-4 hr. (For the Master's Degree, Special Topics ordinarily may count 2 to 4 hr.; maximum credit, 6 hr.).

340. Advanced Farm Management. I. 3 hr. PR: Agr. Econ. 206

341. Production Economics. I. 3 hr. Economic principles of production with special application to agriculture.

342. Advanced Agricultural Economics. II. 3 hr.

380, 381, 382, 383. Research. I and II. 1-6 hr. per semester.

RURAL SOCIOLOGY

Undergraduate Division

105. Sociology of Rural Life. II. 3 hr. Social aspects of rural living; charactertistics of rural population, social structure, and institutional arrangements (family, community, education, religion, recreation, health, welfare, and local government).

Graduate Division

320, 321, 322, 323. Special Topics. I, II, S. 2-4 hr. (For the Master's Degree, Special Topics ordinarily may count 2 to 4 hr.; maximum credit, 6 hr.).

380, 381, 382, 383. Research. I and II. 1-6 hr. per semester.

AGRICULTURAL EDUCATION

Professor Butler; Associate Professor Harvey (Extension Education); Assistant Professors Kelly and McGhee; Graduate Assistant Ash.

Undergraduate Division

118. Organizations and Clubs for Farm Boys. II. 2 hr. Problems involved in directing the activities of FFA and similar organizations.

134. Methods of Cooperative Extension. I. 2 hr. Activities of county cooperative extension agents and of the cooperative extension programs in West Virginia.

138. Theory and Practice of Cooperative Extension Work. II. 2 hr. Methods used in extension work and their underlying principles.

180, 181. Assigned Topics. I, II, SI. 1 hr. 1-4 hr. per semester. PR: Adequate ability and training for the work proposed and permission to register.

Ed. 124. Student Teaching in Vocational Agriculture. I, II. 6 hr.

Ed. 160. Materials and Methods of High-School Teaching of Vocational Agriculture. I. 3 hr. Organization and preparation for teaching vocational agriculture in the high school.

Ed. 276. Teaching Young and Adult Farmer Classes. I, SI. 2 hr. PR: Ed. 105, 106. Participation in conducting young and adult farmer classes and school-community food preservation center; organization, course of study, methods of teaching and supervision of the classes, young farmers' associations, and adult farmers' organizations.

Ed. 277. Organizing and Directing Supervised Farming Programs. I, SI. 2 hr. PR: Ed. 160 or consent. Planning programs of supervised farming, supervising and evaluating such programs for day students, young farmers, and adult farmers.

Graduate Division

239. Program Building in Cooperative Extension. II. 3 hr. PR: Agr. Educ. 134, 138, or consent. Rural organization in relation to program building. Leadership and group action. Over-all working and educational objectives. Principles, methods, and goals in developing county extension programs.

Ed. 318. Planning Programs and Courses for Vocational Agriculture Departments. II, SI. 2 hr. PR: Ed. 160, 124. Gathering data, studying the farming problems and building problems of day students, young farmers, and adult farmers in and through the high school for the community.

320, 321, 322, 323. Special Topics. I, II, S. 1-4 hr. (For the Master's Degree, Special Topics ordinarily may count 2 to 4 hr.; maximum credit, 6 hr.).

350, 351, 352, 353. Seminar. I, II, SI. 1-6 hr. 1 hr.

360. Problem. I, II, S. 1-3 hr. (For the Master's Degree).

380, 381. Research. I and II, S. 1-6 hr. per semester.

AGRICULTURAL ENGINEERING AND AGRICULTURAL MECHANICS

Professors Longhouse and Dickerson; Associate Professor Emerson; Assistant Professor Phillips; Instructors Collins and Elliott.

AGRICULTURAL ENGINEERING

Undergraduate Division

10. Principles of Agricultural Engineering. I. 3 hr. PR: Math. 4. A general course introducing the several fields of agricultural engineering and how they are applied in agriculture and industry. 3 hr. rec.

100. Farm Structures. II. 3 hr. PR: T.A.M. 102. Structural design and functional requirements of farm service buildings. 2 hr. rec., 3 hr. lab.

110. Application of Electricity to Agriculture. II. 3 hr. PR: E.E. 106. Economic application of electric light, heat, and power. 2 hr. rec., 3 hr. lab.

140. Soil and Water Conservation. I. 3 hr. PR: C.E. 115. Engineering principles and practices in conservation, utilization, and management of soil and water resources. 2 hr. rec., 3 hr. lab.

180, 181. Assigned Topics. I, II. 1-4 hr. per semester.

190. Farm Machinery. II. 3 hr. PR: M.E. 113. Construction, operation, adjustment, and testing of farm machines. 2 hr. rec., 3 hr. lab.

200. Seminar. I. 1 hr. PR: Senior standing.

220. Agricultural Process Engineering. II. 3 hr. PR: C.E. 115, M.E., 121. Application of the fundamentals of engineering to agricultural engineering processes. 2 hr. rec., 1 hr. lab.

230. Farm Power. I. 4 hr. PR: M.E. 121. Fundamental theories underlying design and operation of internal combustion engines used in agriculture. 3 hr. rec., 3 hr. lab.

240. Hydrology. I. 3 hr. PR: C.E. 115. The study of a hydrologic cycle with emphasis on precipitation and runoff as related to design of hydraulic structures, soil and water conservation, and flood control. 3 hr. rec.

Graduate Division

320, 321. Special Topics. I, II, S. 1-6 hr. (For the Master's Degree, Special Topics ordinarily may count 2 to 4 hr.; maximum credit, 6 hr.).

397. Research. I and II. 1-6 hr.

AGRICULTURAL MECHANICS

Undergraduate Division

152. Farm Shop. I. 3 hr. PR: Math. 2. Construction and repair problems including carpentry, metal working, forging, fitting tools, repairing harness, and filing saws. Primarily for Vocational Agriculture teachers. 1 hr. rec., 1 hr. lab.

155. Household Equipment. II. 3 hr. PR: Math. 2. Planned to help students understand mechanical equipment in the home and its effective use. 1 hr. rec., 3 hr. lab.

180, 181. Assigned Topics. I, II, S. 1-4 hr. per semester.

200. Rural Water Supply and Sanitation. I. 2 hr. PR: Agr. Eng. 10. Pump principles, planning installations of water systems, and sewage disposal systems. 1 hr. rec., 3 hr. lab.

252. Advanced Farm Mechanics. II. 3 hr. PR: Agr. Mech. 152. Forging, cold-iron work, tool fitting, woodworking. Offers training for teaching shop work in rural high schools. 1 hr. rec., 6 hr. lab.

253. Advanced Farm Machinery. II. 3 hr. PR: Agr. Eng. 10. Performance of agricultural equipment including calibration, efficiency, adjustments, and maintenance. Theoretical and practical aspects of selection based on economics, compatibility of machines with other equipment and the farming operation, service, and factors of custom operation. 2 hr. rec., 3 hr. lab.

254. Farm Maintenance and Construction Welding. II. 3 hr. PR: Agr. Eng. 10. Characteristics and properties of metals used in farm machinery and equipment. Machinery repair, including oxacetylene cutting and welding. A.C. and D.C. electric. 1 hr. rec., 6 hr. lab.

255. Care and Repair of Home Equipment. II. 2 hr. For advanced undergraduate and graduate students. Construction, maintenance, and repair of household equipment; their comparative cost and economic use. 1 hr. rec., 3 hr. lab.

259. Farm Structures. I. 3 hr. Fundamentals of construction, functional requirements, materials, new equipment, and use of laborsaving ideas and machinery. 2 hr. rec., 3 hr. lab.

270. Electricity in Agriculture. I. 3 hr. PR: Agr. Eng. 10 and Math. 4. The study of the fundamentals of electrical energy and its application to lighting, power, heating, and control circuits used in agriculture. 2 hr. rec., 3 hr. lab.

275. Agricultural Engines. II. 3 hr. PR: Agr. Eng. 10. Relation of theory to design and operation of internal combustion engines with emphasis on care, operation, and maintenance. Study covers one, two, three, four, six, and eight cylinder engines, both in two and four stroke cycle designs. 2 hr. rec., 3 hr. lab.

Graduate Division

320, 321, 322, 323. Special Topics. I, II, S. 2-4 hr. (For the Master's Degree, Special Topics ordinarily may count 2 to 4 hr.; maximum credit, 6 hr.).

380, 381. Research. I and II. 1-6 hr. per semester.

AGRONOMY AND GENETICS

Professors Pohlman, Baughman, and Veatch; Associate Professor Johnson; Assistant Professors Jencks, Jung, Ulrich, and van Eck; Instructors Carlson and Reese.

AGRONOMY

2. Principles of Soil Science. I. 3-4 hr. PR: Chem. 2. An introduction to soil science. 2 lec., 2 lab.

10. Forest Soils. I. 4 hr. PR: Chem. 2. Introduction to soil science with particular emphasis on forest soils. 3 lec., 1 lab.

180, 181. Assigned Topics. I, II. 1-4 hr. per semester.

210. Fertilizer and Soil Fertility. I. 3 hr. PR: Agron. 2 or 10. Soil properties in relation to fertility and productivity of soils; evaluation of soil fertility; production of fertilizers and their use in increasing the fertility and productivity of soils.

212. Soil Conservation and Management. II. 3 hr. PR: Agron. 210. Principles of soil and water conservation in relation to soil erosion control. Using soil technology to solve soil management problems relating to cropping systems. Offered in 1962-63 and in alternate years.

216. Soil Genesis and Classification. II. 3 hr. PR: Agron. 2 or 10. The classification and mapping of soils. Theory and practice in soil classification, soil mapping, and land judging. Offered in 1963-64 and alternate years.

230. Soil Physics. I. 3 hr. PR: Agron. 2 or 10. Physical properties of soils, water, and air relationships and their influence on soil productivity. Offered in 1962-63 and alternate years. 2 lec., 1 lab.

251. Weed Control. I. 2 hr. PR: Agron. 2. Fundamental principles of weed control. Recommended control measures for and identification of common weeds.

252. Grain and Special Crops. II. 3 hr. PR: Agron. 2. Advanced study of methods in the production of grain and special crops. Varieties, improvement, tillage, harvesting, storage and uses of crops grown for seed or special purposes. Offered in 1962-63 and alternate years.

254. Pasture and Forage Crops. II. 4 hr. PR: Agron. 2. All phases of pasture and forage crop production, including identification, seeding, management, use, seed production, and storage of forage crops. 3 lec., 1 lab.

Graduate Division

316. Soil Chemistry. I. 3 hr. PR: Consent. Fundamental chemical properties of soils in relation to plant growth; nature and properties of soil colloids; base exchange and soil acidity; availability of plant food elements and soil-plant interrelationships. Offered in 1963-64 and alternate years.

320, 321, 322, 323. Special Topics. I, II, S. 2-4 hr. (For the Master's Degree, Special Topics ordinarily may count 2 to 4 hr.; maximum credit, 6 hr.).

350, 351, 352, 353. Seminar. I, II. 1 hr. per semester. Recent literature pertaining to soil and crop production.

380, 381, 382, 383. Research. I, II. 1-6 hr. per semester.

BACTERIOLOGY

314. Soil Microbiology. II. 4 hr. PR: Agron. 2 and Bact. 141. Occurrence of microorganisms in soils and their relationship to decomposition of organic matter, availability of plant nutrients, and soil acidity; technique of isolation and study.

GENETICS

Undergraduate Division

†111. Elementary Genetics. I, II. 2 hr. PR: 6 hr. of biological science. Elementary study of the principles of heredity.

112. Genetics Laboratory. I, II. 1 hr. Breeding experiment with Drosophila.

180, 181. Assigned Topics. 2-4 hr. PR: Gen. 111 or 221 and consent.

220. Crop Breeding. II. 3 hr. PR: Gen. 111 or 221. Methods and basic scientific principles involved in the improvement of leading cereal and forage crops through hybridization and selections. Offered in 1963-64 and alternate years.

221. Genetics. I. 3 hr. PR: 8 hr. in biological science. Fundamental principles of inheritance.

222. Advanced Genetics. II. 3 hr. PR: Gen. 111 or 221 and consent.

224. Human Genetics. II. 2 hr. PR: Gen. 111 or 221. A study of inheritance in man.

Graduate Division

320, 321, 322, 323. Special Topics. I, II, S. 2-4 hr. (For Master's Degree, Special Topics ordinarily may count 2 to 4 hr.; maximum credit, 6 hr.).

350, 351, 352, 353. Seminar. I, II. 1 hr. per semester. Recent literature pertaining to breeding, genetics, and cytology.

380, 381, 382, 383. Research. I, II. 1-6 hr. per semester.

ANIMAL AND VETERINARY SCIENCE

Professors Anderson, Olson, Kidder and Welch; Associate Professors Horvath and Dozsa; Assistant Professor McBee; Instructor Boyles.

100. Introduction to the Physiology of Domestic Animals. I. 3 hr. PR: Biol. 2 or Zool. 2; Chem. 131 (concurrent) or consent. The function and regulation of the principal systems of the animal body.

101. Animal Nutrition. I. 3 hr. Digestion and metabolism of food nutrients, nutrient requirements of farm animals, and nutritive values of feeds and rations.

102. Animal Pathology. I. 3 hr. Diseases of domestic animals, with special emphasis on the common diseases.

*138. Grading and Selection. II. 2 hr. (2 labs.).

†Students majoring in curricula requiring Genetics 221 may not receive credit for Genetics 111, and credit will not be given for Genetics 221 to those students who have previously earned credit for Genetics 111.

*Transportation for required trips in connection with these courses will generally be supplied by the College. Students will be responsible for their meals and lodging.

141. Beef Production. I. 3 hr. (1 lab.).

142. Pork Production. II. 3 hr. (1 lab.).

*143. Advanced Judging. I. 2 hr. (2 labs.). Students taking this course will be required to participate in a tour of inspection of representative flocks and herds.

162. Sheep Production. II. 3 hr. (1 lab.).

166. Meats. II. 2 hr. Lectures and demonstrations in identification, selection, and nutritive value of meat cuts. Primarily for home economics students.

*167. Meats. I. 3 hr. (2 labs.). Processing, curing, and care of meats. Visit to one of the large packing houses of Pittsburgh required.

*169. Meat Judging. I. 2 hr. Tour of representative packing plants required.

180, 181. Assigned Topics. I, II. 1-4 hr. per semester.

195. Seminar. II. 1 hr. Senior seminar.

202. Advanced Meats. II. 3 hr. (2 labs.). PR: An. & V.S. 167. Studies covering composition of meat, complete fabrication of meat animal carcasses, factors influencing yield, physiology and chemistry of pertinent phenomena, and meat merchandising.

206. Parasites and Pathology. II. 3 hr. PR: Biol. 1 and 2 or equivalent. Common parasites of farm animals, their control, and their effect upon the host.

223. Advanced Livestock Production. I. 3 hr. (1 lab.). PR: An. & V.S. 101. Phases of beef production involving problem work in specialized commercial and purebred fields, including processing.

224. Advanced Livestock Production. II. 3 hr. (1 lab.). PR: An. & V.S. 101. Special studies in wool and market-lamb production, including processing.

225. Reproduction of Farm Animals. II. 3 hr. PR: Genetics 221 or consent. The anatomy and physiology of reproduction in farm animals.

226. Breeding of Farm Animals. II. 3 hr. PR: Genetics 221 or consent. The application of principles of quantitative population genetics to the improvement of farm animals.

Graduate Division

303. Advanced Animal Nutrition. II. 3 hr. PR: An. & V.S. 101 and Chem. 131 or 233. Chemistry of feeding stuffs and of the animal body, as well as of digestion and metabolism of food nutrients. Offered in 1963-64 and alternate years.

310. Nutrition and Physiology of the Ruminant. II. 3 hr. PR: An. & V.S. 100, 101; Agr. Biochem 190. A study of the nutrition and physiological processes peculiar to the ruminant animal. Offered in 1963-64 and alternate years.

320, 321, 322, 323. Special Topics. I, II, S. 1-4 hr. (1 hr. credit in special cases only.) Advanced study in such topics as vitamins, minerals, and internal secretions in relation to health, growth, reproduction, and newer studies in the field of animal nutrition and breeding. (For the Master's Degree, Special Topics ordinarily may count 2 to 4 hr.; maximum credit, 6 hr.).

NOTE: Students assigned to a 200 course for graduate credit will be required to prepare a semester paper on some special phase of the course in addition to the regular course work.

350, 351, 352, 353. Seminar. I, II. 1 hr.

370. Methods of Animal Research. (With Dairy and Poultry Science). I. 3 hr. Research methods used in animal nutrition and breeding. Offered in 1962-63 and alternate years.

380, 381, 382, 383. Research. I, II. 1-6 hr. per semester. For graduate students working on a problem in preparation of a thesis.

DAIRY SCIENCE

Professor Porterfield; Associate Professors Thomas, Weese, and Mitchell; Assistant Professors Ackerman and Rakes; Instructor Smith.

Undergraduate Division

12. Dairy Technology. II. 3 hr. Introductory. Composition and properties of milk and milk products; butterfat testing; manufacture of dairy products.

101. Animal Nutrition. I. 3 hr. Digestion and metabolism of feed nutrients; nutrient requirements of farm animals; nutritive values of feeds and rations.

107. Milk and Public Health. I. 3 hr. Food value of milk and its production and processing in relation to public health.

123. Dairy Cattle—History and Selection. II. 3 hr. A laboratory course in the fundamentals of judging dairy cattle.

124. Judging Dairy Products. II. 2 hr. A laboratory course in evaluating and judging dairy products.

180, 181. Assigned Topics. I and II. 1-4 hr. per semester. For advanced dairy students who desire to pursue study along some particular phase of dairying.

195. Seminar. II. 1 hr. Primarily for seniors. No credit for graduate students.

204. Advanced Dairy Technology. II. 4 hr. Chemical and bacteriological methods used in the technical control of milk and milk products. Offered in 1962-63 and alternate years.

221. Dairy Cattle. I. 3 hr. History of breeds and families of registered dairy cattle. Organization and activities of breeding associations.

222. Milk Production. II. 4 hr. Feeding and management of dairy cattle.

225. Reproduction of Farm Animals. II. 3 hr. PR: Genetics 221 or consent. The anatomy and physiology of reproduction in farm animals (not open to those having credit for An. & V.S. 225).

226. Breeding of Farm Animals. II. 3 hr. PR: Genetics 221 or consent. The application of principles of quantitative population genetics to the improvement of farm animals (not open to those having credit for An. & V.S. 226).

227. Milk Secretion. II. 3 hr. PR: Chem. 31, D. S. 225. The evolution, anatomy, and growth of the mammary gland. The chemical, hormonal, physiological, and environmental factors affecting lactation.

Graduate Division

320, 321, 322, 323. Special Topics. I, II, S. 2-4 hr. Advanced study in such topics as vitamins, minerals, and internal secretions in relation to health, milk production, and new studies in the field of animal nutrition and breeding. (For the Master's Degree, Special Topics ordinarily may count for 2 to 4 hr.; maximum credit, 6 hr.).

326. Advanced Animal Selection. II. 3 hr. PR: Agr. 212 and Genetics 221 or equivalent. An advanced course dealing with the basic concepts of experimental and statistical approaches in the analysis of quantitative inheritance with special reference to the magnitude and nature of genotypic and non-genotypic variability.

330. Advanced Milk Production. II. 3 hr. PR: D. S. 101 or equivalent. Advanced study of the feeding, breeding, and management of dairy cattle.

350, 351, 352, 353. Seminar. I, II. 1 hr. Dairy, poultry, and animal science.

370. Methods of Animal Research (With Animal and Poultry Science.) I. 3 hr. Research methods used in animal nutrition and breeding. Offered in 1963-64 and alternate years.

380, 381, 382, 383. Research. I, II. 1-6 hr. per semester. For graduate students working on problems in preparation of a thesis.

BACTERIOLOGY

246. Dairy Bacteriology. I. 3 hr. See Bacteriology 246, page 122.

CHEMISTRY

218. Dairy Chemistry. II. 3 hr. See Agricultural Biochemistry 218, page 112.

HORTICULTURE

Professors Childs, Marsh, Schubert, and Westover; Associate Professors Fortney, Neal, and Steyers; Assistant Professor Dye; Instructor Shumaker.

Undergraduate Division

1. Vegetable Production. II. 3 hr. The vegetable garden. Prerequisite to all courses in olericulture.

2. Fruit Production. I. 3 hr. Tree fruits and small fruits.

115. Judging and Identification of Apple Varieties. I. 1 hr. Two laboratory periods first half of semester.

116. Flower Judging. II. 1 hr. One laboratory period per week.

117. Vegetable Identification and Judging. I. 1 hr. Identification and judging of the common vegetables. Laboratory course.

129. History and Appreciation of Landscape Design. II. 3 hr. An introduction to history and theory of landscape design.

140. Woody Plant Materials. II. 3 hr. Trees, shrubs, and vines; their identification, culture, and use. Offered in 1962-63 and alternate years.

141. Greenhouse Management. II. 3 hr. A practical study of greenhouse operations.

151. Flower Arrangement. I. 3 hr. PR: Hort. 141 or consent. A basic course in flower arrangement to cover all occasions for the home and retail flower shop.

180, 181. Assigned Topics. I, II, S. 1-4 hr. per semester. Limit of 6 hr. credit.

204. Plant Propagation. II. 3 hr. Plant propagation and nursery practice.

206. Small-Fruits Production. I. 3 hr. A practical and scientific study of standard cultural practices in the small-fruits plantation.

208. Application of Sprays, Dusts, and Fumigants. II. 2 hr. PR: Entom. 202 or Pl. Path. 103 and Hort. 1, 2, or 229 (1 lec., 1 lab.). Training in the use of machinery and materials in the application of fungicides, insecticides, hormones,

and plant nutrients to horticultural crops. Development and interpretation of spray schedules.

212. Commercial Tree-Fruit Production. I. 3 hr. Latest methods in pruning, spraying, soil culture, and other production practices for fruit trees from the practical and scientific standpoint.

229. Landscape Design. I. 3 hr. (1 lec., 1 scheduled lab., 1 arranged lab.). A course in ornamental horticulture giving an appreciation of the basic principles of design and information pertaining to the use and care of ornamental plants around the home.

232. Commercial Vegetable Production. II. 2 hr. PR: Hort. 1. Current methods of commercial vegetable production, including equipment, soil and climatic adaptation, plant raising, soil culture, harvesting, grading, and packing.

234. Laboratory Inspection Trip. II. 1 hr. PR or concurrent: Hort. 232. A 3-day inspection trip in connection with Hort. 232.

239. Advanced Landscape Design. I. 3 hr. PR: Hort. 140, 229, or consent. Advanced studies in landscape design.

Graduate Division

320, 321, 322, 323. Special Topics. I, II, S. 2-4 hr. (For the Master's Degree, Special Topics ordinarily may count for 2 to 4 hr.; maximum credit, 6 hr.).

380, 381, 382, 383. Research. I, II, S. 1-6 hr. per semester. (Maximum credit 6 hr.).

PLANT PATHOLOGY, BACTERIOLOGY, AND ENTOMOLOGY

Professors Barnett, Dorsey, Gallegly, Leach, Lilly, True, and Wilson; Associate Professors Adams and Elliott; Assistant Professor Kulman.

BACTERIOLOGY

Undergraduate Division

141. General Bacteriology. I, II. 4 hr. PR: Chem. 1, 2. Introductory, morphological, cultural, and physiological characteristics of bacteria; application of bacteriology to agriculture, home economics, sanitation, and health.

180, 181. Assigned Topics. I, II, S. 1-4 hr. per semester.

246. Dairy Bacteriology. I. 4 hr. PR: Bact. 141. Microorganisms in market milk, in manufacture of butter, cheese, and fermented milk, and in milk hygiene; practice in preparation of media; making bacterial counts in milk. Offered in 1962-63 and alternate years.

248. Sanitary Bacteriology. I. 3 hr. PR: Bact. 141. Standard bacteriological methods used in routine examination of water sewage. Offered in 1963-64 and alternate years.

Graduate Division

314. Soil Microbiology. II. 4 hr. PR: Bact. 141 and organic chemistry. Occurrence and distribution of microorganisms in soils and their interrelationships. Their role in decomposition of organic matter and other transformations of soil constituents. Offered in 1962-63 and alternate years.

320, 321, 322, 323. Special Topics. I, II, S. 2-4 hr. (For Master's Degree, Special Topics ordinarily may count for 2 to 4 hr.; maximum credit, 6 hr.).

380, 381, 382, 383. Research. I, II, S. 1-6 hr. per semester.

ENTOMOLOGY

Undergraduate Division

152. Forest Entomology. II. 3 hr. PR: Forestry 112. Relationships between insects and the forest; recognition and control of important species. This course is primarily designed for forestry students.

180, 181. Assigned Topics. I, II. 1-4 hr. PR: Entom. 202 or equivalent. Special studies in insect ecology, life-histories, macro- and micro-anatomy, taxonomy, physiology, and control methods.

202. Agricultural Entomology. II. 4 hr. PR: Biol. 1, 2. A course dealing with the basic aspects of insect life, emphasizing the study of economically important insects and their control. Designed to meet the needs of students in agriculture. Does not carry graduate credit for majors in Entomology.

203. Economic Entomology. II. 3 hr. PR: Entom. 202. Evaluation of insect control problems; study of surveys and control methods; equipment; insecticides. Offered in 1962-63 and alternate years.

Graduate Division

313. Insect Transmission of Plant Diseases. I. 3 hr. PR: Pl. Path. 153, 201 or Entom. 202. Role of insects in spread and development of plant diseases. Offered in 1963-64 and alternate years.

320, 321, 322, 323. Special Topics. I, II, S. 2-6 hr. PR: Entom. 202. Advanced study of entomological topics of special interest to the student.

380, 381, 382, 383. Research. I, II, S. 1-6 hr.

PLANT PATHOLOGY

Undergraduate Division

153. Forest Pathology. I. 4 hr. PR: Biol. 2, For. 112. Important diseases of forest and shade trees. Causes and methods of control.

180, 181. Assigned Topics. I, II. 1-4 hr. per semester.

201. General Plant Pathology. I. 4 hr. PR: Bact. 141. Nature and causes of plant diseases; methods of control.

202. Principles of Plant Pathology. II. 4 hr. PR: Bact. 141 and either Plant Path. 153, 201, or 203, or consent. Primarily for graduate students and seniors majoring in botany, biology, or agricultural science. Nature of diseases in plants with practice in laboratory methods. Offered in 1963-64 and alternate years.

203. Mycology. I. 4 hr. Lectures, field and laboratory studies of parasitic and saprophytic fungi.

204. Diseases of Fruit Crops. I. 2 hr. PR: Pl. Path. 201. The important diseases of commercial fruits. Causes and methods of control. Offered in 1963-64 and alternate years.

205. Diseases of Ornamentals. II. 2 hr. PR: Pl. Path. 153 and 201. The important diseases of ornamentals. Causes and methods of control. Offered in 1963-64 and alternate years.

206. Diseases of Vegetable Crops. II. 2 hr. PR: Pl. Path. 201. The important diseases of potatoes and vegetable crops. Causes and methods of control. Offered in 1962-63 and in alternate years.

207. Diseases of Field and Forage Crops. II. 2 hr. PR: Pl. Path. 201. The important diseases of cereals, legumes, and grasses. Causes and methods of control. Offered in 1962-63 and alternate years.

208. Application of Sprays, Dusts, and Fumigants. II. 2 hr. PR: Entom. 202 or Pl. Path. 201 and Hort. 1, 2, or 229, or its equivalent. One lecture and one laboratory. Training in the use of machinery and materials in the application of fungicides, insecticides, herbicides, hormones, and plant nutrients to horticultural crops. Also the development and interpretation of spray schedules.

209. Nematology. I. 3 hr. PR: Pl. Path. 201 or consent. Primarily for graduate students majoring in the agricultural sciences, zoology or botany. Nematode taxonomy, bionomics, and control, with particular emphasis on plant parasitic forms. Offered in 1962-63 and alternate years.

Graduate Division

313. Insect Transmission of Plant Diseases. I. 3 hr. PR: Pl. Path. 153, 201, or Entom. 202. Role of insects in spread and development of plant disease. Offered in 1963-64 and alternate years.

315. Advanced Forest Pathology. II. 3 hr. PR: Pl. Path. 203 and either Pl. Path. 153 or Pl. Path. 201. Principles, substance, and application of our knowledge of tree diseases and decays, especially as they may be related to forest management practices. Offered in 1963-64 and alternate years.

320, 321, 322, 323. Special Topics. I, II, S. 2-4 hr. (For Master's Degree, Special Topics ordinarily may count 2 to 4 hr.; maximum credit, 6 hr.).

330. Physiology of the Fungi. II. 4 hr. PR: Organic chemistry, mycology, and bacteriology, or consent. Physiological aspects of growth, reproduction, and parasitism of fungi, with emphasis on nutrition, environment, and other biotic factors.

340. Taxonomy of the Fungi. I. 3 hr. PR: Pl. Path. 203. Collection and identification of fungi, with emphasis upon those of economic importance. Offered in 1962-63 and alternate years.

350, 351. Seminar. I, II. 1 hr. per semester.

380, 381, 382, 383. Research. I, II, S. 1-6 hr.

POULTRY SCIENCE

Professor Patrick; Associate Professor Hyre; Instructor Martin.

Undergraduate Division

103. Poultry Feeding and Management. II. 3 hr. Factors in poultry production, feeding, and management as related to scientific investigations.

106. Preparation and Grading of Eggs and Poultry for Market. I. 2 hr. (1 lab.). Latest methods in killing, dressing, and grading poultry. Grading, storing, and processing eggs for market. Offered in 1963-64 and alternate years.

108, 109, 110. Poultry Plant Experience. I, II, S. 1 hr. (3-hr. lab.). Experience in operating a poultry breeding farm, including trapnesting, incubation, and pedigreeing. A report will be required.

180, 181. Assigned Topics. I, II. 1-4 hr. per semester.

195. Senior Seminar. II. 1 hr. Primarily for seniors. No credit for graduate students.

201. Advanced Poultry Production. I. 3 hr. PR: P.S. 103 or An. & V.S. 101 for graduate credit. Special phases of broiler and egg production, disease control, labor-saving studies, recent designs in building and heating equipment for all types of poultry.

202. Principles of Biological Radionuclide Science. I, S. 3 hr.

NOTE: Students assigned to a 200 course for graduate credit will be required to prepare a semester paper on some special phase of the course in addition to the regular course work.

212. Breeding and Incubation: Principles and Practices. I. 3 hr. (1 lab.). PR: Genetics 221 or consent. Study of methods available for improving and reproducing meat and egg quality. Offered in 1962-63 and alternate years.

214. Biological Radionuclide Methods. I, II. 3 hr. PR: Chem. 1, 2, 131, or consent. Using the chick and radionuclides as applied to chick biological methods. Radionuclide methods and isotope handling as needed by students interested in research.

Graduate Division

320, 321, 322, 323. Special Topics. I, II, S. 1-4 hr. (1 hr. credit in special cases only). Advanced study in such topics as vitamins, minerals, and internal secretions in relation to health, growth, egg production, reproduction, and newer studies in the field of animal nutrition and breeding. (For the Master's Degree, Special Topics ordinarily may count 2 to 4 hr.; maximum credit, 6 hr.).

330. Mineral Metabolism. II. 3 hr. PR: Chem. 1, 2, 31; Biochem. 290-291, or consent.

350, 351, 352, 353. Seminar. I, II. 1 hr. Poultry, Animal, and Dairy Science.

370. Methods of Animal Research. I, II. 3 hr. (With An. & V.S. and D. S.). Research methods used in animal nutrition and breeding. Offered in 1962-63 and alternate years.

380, 381, 382, 383. Research. I, II. 1-6 hr. per semester. For graduate students working on a problem in preparation for a thesis.

Division of Forestry

GENERAL INFORMATION

Organization and Purpose

In its Division of Forestry, West Virginia University offers four curriculum options of four years each, all leading to the degree of Bachelor of Science in Forestry. A student may major in forest management, wildlife management, wood technology, or wood industry.

The field of forestry is a broad one. Those who enter it must receive an education of a breadth equal to that of the profession which they expect to make their life work. The professional forester's work includes such diversified activities as timber production, logging, surveying, timber estimating, park management, forest protection, forest-stand improvement, flood control, watershed protection, soil erosion control, submarginal land development, restoration of game, forest-range management, stream development, lumber dry-kiln operation, plywood and furniture manufacture, timber preservation, and construction of public camps and summer homesites.

The wide scope of the modern field of forestry demands a thorough basic training in the professional forester. This accounts for the large number of required courses in the professional forestry curricula. If a forester wishes to specialize in any one branch of the field, graduate work is needed.

Regardless of the major selected, the curriculum options include a two years' broad foundational study of the natural and social sciences basic to the field of forestry. This is followed in the junior and senior years by a more detailed study of forestry principles and techniques. Many of the courses provide for field laboratories, enabling the student to see first-hand application of the principles presented in the classroom and to experiment with the various techniques he is learning.

In addition to the forest work which forms a part of the regular courses on the main campus at Morgantown and the summer Forestry Camp, the student is expected to devote the summer after his junior year to employment with a forest-using agency or private industry. This gives him further experience which is valuable in connection with his fourth-year studies, as well as in obtaining permanent employment after graduation.

Many opportunities of summer employment are arranged through the Division of Forestry with the United States Forest Service and with private forest industries which are members of the National Lumber Manufacturers Association. The remunerations for such temporary undergraduate employment varies from about $225 to $300 per month.

Facilities for Instruction

The Division of Forestry of West Virginia University is one of twenty-eight forestry schools in the country which are fully accredited by the Society of American Foresters. Situated in Morgantown, it is favorably located in relation to forests available for educational and research use.

Coopers Rock State Forest, an area of 13,000 acres fronting on Cheat Lake, is less than 10 miles from the main campus. The Division of Forestry has a 99-year lease on 7,500 acres of this Forest. The tract, now known as the West Virginia University Forest, is managed by the Division and is used for teaching, research and demonstration purposes. The Monongahela National Forest lies within 45 miles of Morgantown. The University Farm Woods, 100 acres bearing mature timber, is within two miles. Acquisition of the 500-acre Tygart Valley Forest at Dailey has increased the educational and research facilities of the Division. These forests are utilized by forestry students for study during their four years of training.

During 1951, an agreement was completed between West Virginia University and the Island Creek Coal Company. This agreement made the 3,000-acre Island Creek Experimental Forest available for research in applied forestry. The Division of Forestry maintains a resident forester at Holden who is in charge of the research forest in nearby Mingo County. Methods of forest production on a commercial basis, suited to the forest types and topography of southern West Virginia, are being studied. The experimental work is open to inspection by forestry students.

A lumber dry kiln, portable sawmill, and experimental wood-treating plant have recently been acquired by the Division of Forestry.

The dry kiln is of compartment type, cross circulating, steam heated, with automatic self-recording temperature and humidity controls. It has a capacity of approximately five thousand board feet of lumber per charge, and provides properly kiln-dried lumber for University use. It provides for student experience in dry kiln operation.

The portable sawmill is of standard type, and may be adapted to permanent, portable, or mobile use. It is driven by a 75-horsepower diesel engine. A truck-tractor and semi-trailer are used in transporting the mill and in hauling logs and lumber. The unit is used for training in mill installation, adjustment, and operation. Students participate in logging and sawmilling operations conducted under conditions similar to ordinary small industrial operations.

The experimental wood-treating plant is outstanding in its facilities for duplicating any of the commercial methods of pressure-treating wood. A recording instrument keeps a time, pressure, vacuum, and temperature record of each treating operation. In addition, indicating vacuum pressure and temperature gauges are installed, including a mercury-vacuum gauge. The equipment was designed especially for West Virginia University, to be used in laboratory instruction and research.

The facilities of the Division of Forestry also include a woodworking shop, plywood testing machine, and experimental plywood hot presses. A complete collection of samples of commercial woods of the United States is maintained for study.

The wood technology laboratory is equipped with microscopes, a microtome for preparing wood sections used in identification, wood moisture meters, and a portable precision potentiometer. An experimental electrically-heated condenser-type dry kiln with automatic temperature and humidity controls is used for practice, in addition to the five thousand-board foot steam-heated dry kiln.

The forestry library has been developed primarily for student use. It contains more than 14,000 catalogued books and bulletins covering the field of forestry. All periodicals of interest to the forester may be readily found. Student organizations are decorating the library with pictures and trophies, creating interesting and pleasant surroundings for study.

Camp Wood

The Forestry Camp, held each summer for students who have completed their sophomore year of the professional curricula, is situated near Alvon about 12 miles north of White Sulphur Springs, on the southern end of the Monongahela National Forest in Greenbrier County. This location offers a great variety of forest types, conditions, activities, and industries.

The program of instruction provides training and practical experience in land surveying, timber estimating, forest management, wildlife management, and wood utilization. A logging operation is carried out by the students on the Meadow Creek Management Area. This is a tract of mature oak and pine timber which has been reserved by the United States Forest Service for this purpose. A considerable area of timber near the camp has been reserved by private owners for mensuration studies. The camp program culminates in a one-week trip into the southern pine region, where silvicultural operations and wood-using industries are studied.

The cost of tuition at camp is $40 for resident and $80 for nonresident students. Food and lodging for the nine-week period at Camp Wood costs $144 plus tax. An additional $10 is collected for lodging on the southern trip. Other expenses for scheduled trips from camp usually total about $25.

REQUIREMENTS FOR THE DEGREE

The Division of Forestry offers four curriculum options leading to the degree of Bachelor of Science in Forestry. The first year of work is the same in all four curricula except that students majoring in wood technology must take Mathematics 3, College Algebra, during the first semester. In order to take Mathematics 3, the enrolling freshman must offer 1½ units of algebra in his entrance credits, or take Mathematics 2 as a prerequisite. Courses to be taken during the first and second semesters of work by freshmen in all curricula are listed below.

FIRST YEAR, ALL CURRICULUM OPTIONS

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
Biol. 1—General	4	Biol. 2—General	4
Chem. 1—General	4	Chem. 2—General	4
English 1—Composition	3	English 2—Composition	3
For. 1—Profession*	1	For. 2—Profession*	1
For. 3—Convocation	0	For. 4—Convocation	0
Math. 2 (3)—Algebra	3	Math. 4—Plane Trigonometry	3
Mil. Sci. or Air Sci. 1	2	Mil. Sci. or Air Sci. 2	2
Phys. Educ. 1—General Program	1	Phys. Educ. 2—General Program	1
	18		18

*Freshmen only.

In each curriculum option the student will have an opportunity to take elective courses that will complete a well-rounded course of study.

FOREST MANAGEMENT

The forest management option offers a strong basic course in Forestry leading particularly to employment in the management of forest land. It is designed to train the student for a professional forestry career in either public or private forestry.

Graduates are prepared to hold positions with the various state forestry and conservation departments, the U. S. Forest Service, the Forestry Division of the U.S. Indian Service, the Soil Conservation Service, and the other federal and state agencies employing professional foresters. They may also be employed by private forest land owners—both corporate and individual—or may enter business as consulting foresters. This option provides a good background for graduate work in all phases of forest production management.

SECOND YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
Agron. 10—Forest Soils	4	Bot. 68—Dendrology	3
Bot. 61—Systematic	2	Bot. 71—Plant Physiology	2
Bot. 67—Dendrology	3	C.E. 6—Topographic Mapping	2
C.E. 5—Land Surveying	4	English 13—Expository Writing	2
Econ. 1—Principles	3	For. 6—Convocation	0
For. 5—Convocation	0	For. 11—Silvics	3
Mil. Sci. or Air Sci. 3	2	For. 21—Mensuration	4
		Mil. Sci. or Air Sci. 4	2
	18		18

SUMMER PRECEDING THIRD YEAR

10 Weeks—10 Hours Credit

For. 106—Forest Surveying and Mensuration Field Practice	5
For. 107—Forest Management, Utilization, and Wildlife Practices	5
	10

THIRD YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
For. 112—Silvicultural Systems	3	For. 113—Seeding and Planting	3
For. 131—Wood Identification	3	For. 114—Forest Economics	3
For. 151—Protection	2	For. 125—Policy and Administration	3
Physics 1—Introductory	4	For. 133—Lumbering	3
Electives	5	Electives	5
	17		17

FOURTH YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
For. 116—Regional Silviculture	2	For. 134—Forest Products	3
For. 123—Management	4	For. 141—Wildlife Management	3
For. 124—Forest Finance	3	Electives	10
For. 126—Forest Measurement by Aerial Photographs	2		
Entomol. 152—Forest Entomology	3		
Pl. Path. 153—Forest Pathology	4		
	18		16

WILDLIFE AND FISH MANAGEMENT

The wildlife and fish management option is designed to give basic undergraduate training in wildlife and fisheries biology. Students who elect this option will satisfy the requirement for graduation by completing successfully 150 credit hours, including all the required courses listed below, and elective courses in botany, zoology, bacteriology, and other related fields. Those completing the curriculum are granted the degree of Bachelor of Science in Forestry.

Many wildlife and fisheries biology positions require the Master's Degree, and majors in this curriculum are encouraged to enroll for graduate work in other institutions. Graduates in wildlife management will, however, meet all requirements for taking the U. S. Civil Service examination for biologist, and will ordinarily meet all requirements for the entering examination in general forestry.

Students in wildlife management will be advised to include, among their electives, courses in botany, zoology, and other related fields. Students who expect to specialize in fish management will take Zool. 251, Invertebrate Zoology; Zool. 263, Ichthyology; Zool. 264, Fisheries Biology, plus nine hours of elective courses.

SECOND YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
Agron. 10—Forest Soils	4	Bot. 68—Dendrology	3
Bot. 61—Systematic	2	Bot. 71—Plant Physiology	2
Bot. 67—Dendrology	3	C.E. 6—Topographic Mapping	2
C.E. 5—Land Surveying	4	For. 6—Convocation	0
Econ. 1—Principles	3	English 13—Expository Writing	2
For. 5—Convocation	0	For. 11—Silvics	3
Mil. Sci. or Air Sci. 3	2	For. 21—Mensuration	4
		Mil. Sci. or Air Sci. 4	2
	18		18

SUMMER PRECEDING THIRD YEAR

For. 106—Forest Surveying and Mensuration Field Practice	5
For. 107—Forest Management, Utilization, and Wildlife Practices	5
	10

THIRD YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
For. 112—Silvicultural Systems	3	For. 113—Seeding and Planting	3
For. 131—Wood Identification	3	For. 114—Forest Economics	3
For. 151—Protection	2	For. 125—Policy and Administration	3
Physics 1—Introductory	4	For. 144—Forest Zoology	3
Electives	5	Electives	5
	17		17

FOURTH YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
For. 123—Management	4	For. 134—Forest Products	3
Entomol. 152—Forest Entomology	3	For. 141—Wildlife Management	3
Pl. Path. 153—Forest Pathology	4	For. 145—Life Histories of Game Animals	3
Electives	6	Electives	8
	17		17

WOOD TECHNOLOGY

The option in wood technology is intended to prepare students to pursue graduate work in the technical phases of wood use or to enter directly into positions dealing with the conversions of forest crops into useful products. Such positions may be either governmental or industrial, with both groups further divided into various degrees of administrative, research, or developmental effort. Students electing to enter the field of wood technology should demonstrate a marked facility in mathematics, physics, and chemistry, since these basic sciences form the foundation for a large part of the knowledge involved in the properties and processing of wood.

SECOND YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
Agron. 10—Forest Soils	4	Bot. 68—Dendrology	3
Bot. 67—Dendrology	3	Bot. 71—Plant Physiology	2
C.E. 5—Land Surveying	4	C.E. 6—Topographic Mapping	2
Econ. 1—Principles	3	English 13—Expository Writing	2
For. 5—Convocation	0	For. 6—Convocation	0
Math. 5—Analytical Geometry	4	For. 11—Silvics	3
Mil. Sci. or Air Sci. 3	2	For. 21—Mensuration	4
		Mil. Sci. or Air Sci. 4	2
	20		18

SUMMER PRECEDING THIRD YEAR

For. 106—Forest Surveying and Mensuration Field Practice	5
For. 107—Forest Management, Utilization, and Wildlife Practices	5
	10

THIRD YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
Chem. 131—Organic	4	For. 114—Forest Economics	3
For. 112—Silvicultural Systems	3	Math. 108—Integral Calculus	4
For. 131—Wood Identification	3	M.E. 20—Mechanical Drawing	3
Math. 107—Differential Calculus	4	Physics 112—General	5
Physics 111—General	5		
	19		15

FOURTH YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
Chem. 105—Qualitative Analysis	4	For. 134—Forest Products	3
For. 123—Management	4	For. 135—Seasoning and Preservation	4
For. 132—Properties of Wood	3	For. 133—Lumbering	3
Pl. Path. 153—Forest Pathology	4	T.A.M. 102—Mechanics of Materials	4
T.A.M. 101—Statistics	3		
	18		14

WOOD INDUSTRY

The four-year Wood Industry option leads to a degree of Bachelor of Science in Forestry and is designed primarily to develop qualified foresters for work with wood-using industries. The wood-using industry that includes basic lumber products, lumber and veneer products, paper and allied products ranks fourth in the nation as to number of wage earners employed.

The first and second years of study are devoted to those basic preparatory subjects that are essential to the more technical courses that follow. The third and fourth years of study allow the student to obtain theory and practice in the more technical phases of his forestry education. Courses in business law and industrial management are included. These provide training in the fundamentals of business practice essential to the forester who contributes to the development of wood industries.

SECOND YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
Agron. 10—Forest Soils	4	Acctng. 1—Prin. of Accounting	3
Botany 67—Dendrology	3	For. 6—Convocation	0
C.E. 5—Land Surveying	4	Bot. 68—Dendrology	3
Econ. 1—Principles	3	For. 11—Silvics	3
English 13—Expository Writing	2	For. 21—Mensuration	4
For. 5—Convocation	0	For. 133—Lumbering	3
Mil. Sci. or Air Sci. 3	2	Mil. Sci. or Air Sci. 4	2
	18		18

SUMMER PRECEDING THIRD YEAR

For. 106—Forest Surveying and Mensuration Field Practice	5
For. 107—Forest Management, Utilization, and Wildlife Practices	5
	10

THIRD YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
For. 112—Silvicultural Systems	3	For. 114—Forest Economics	3
For. 131—Wood Identification	3	For. 134—Forest Products	3
For. 151—Forest Protection	2	Management 111—Ind. Management	3
Entomol. 152—Forest Entomology	3	Electives	8
Physics 1—Introductory	4		
Electives	3		
	18		17

FOURTH YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
For. 123—Management	4	For. 135—Seasoning and Preservation	4
For. 124—Forest Finance	3	For. 137—Grading Wood Products	3
For. 132—Properties of Wood	3	For. 138—Advanced Lumbering	3
Pl. Path. 153—Forest Pathology	4	For. 139—Marketing Forest Products	3
Bus. Ad. 111—Business Law	3	Bus. Ad. 112—Business Law	3
	17		16

COURSES OF INSTRUCTION IN FORESTRY

1, 2. The Profession of Forestry. I and II. 1 hr. per sem. (Required only for students who rank as freshmen in the Division of Forestry.) Survey of the profession of forestry and the opportunities available to foresters.

3, 4, 5, 6. Forestry Convocation. I and II. No credit. All students are expected to attend the weekly convocation. Attendance is required of students during their first four semesters in the Division of Forestry. Speakers and timely topics in forestry and allied fields are presented.

11. Silvics. II. 3 hr. PR or conc: Bot. 67, 68. Forest and environment factors; site and type characteristics.

21. Forest Mensuration. II. 4 hr. PR: Math. 2, 4. Measurements of forest products, trees, and stands; timber estimating; introduction to growth and yield.

106. Forest Surveying and Mensuration Field Practices. S. 5 hr. PR: Bot. 67, C.E. 5, For. 21. The application of surveying and timber practice with emphasis on field problems.

107. Forest Management, Utilization, and Wildlife Practices. S. 5 hr. PR: For. 106. Study of forest management, utilization, and wildlife problems. Trip to observe forest management and utilization in the Southern Pine Region.

112. Silvicultural Systems. I. 3 hr. PR: For. 11. Principles of regeneration cuttings, intermediate cuttings, and cultural operations, with their application to forest stands.

113. Seeding and Planting. II. 3 hr. PR: For. 11. Seeding and planting nursery practice; phases of artificial regeneration.

114. Principles of Forest Economics. II. 3 hr. PR: Econ. 1 or Agr. Econ. 102. The economics of production, distribution, and use for forest goods and services. Emphasis is on the use of analytical methods and techniques in dealing with forest economic problems.

116. Regional Silviculture. I. 2 hr. PR: For. 11, PR or conc: For. 112. Major forest types of the United States; their composition, management, problems, and silvicultural treatment.

122. Forest Mensuration. II. 3 hr. PR: For. 21. The measurement of growth and yield; statistical methods applied to forest measurement problems.

123. Forest Management. I. 4 hr. PR: Summer Camp, PR or conc: For. 112. The principles of sustained yield forest management. Organization of the forest area, selection of management objectives, application of silvicultural systems, and regulation of the cut. The forest management plan.

124. Forest Finance. I. 3 hr. PR: For. 114. Cost and income items in producing and exploiting forest crops; appraisal of stumpage and damages.

125. Forest Policy and Administration. II. 3 hr. (Upperclassmen only). Forest policy in the United States; important federal and state laws; administration of public and private forests.

126. Forest Measurement by Aerial Photographs. I, II. 2 hr. PR: For. 21. Elements of photogrammetry; preparation of maps; interpretation of forest types and timber volumes from aerial photographs.

127. Forest Management Plans. II. 2 hr. PR: For. 123. Analyses of forest management plans. Construction of a sustained yield timber management plan for a specific forest tract.

131. Wood Identification. I. 3 hr. PR: Bot. 67, 68. Identification of commercial timbers of U.S.; basic properties and uses of different woods.

132. Properties of Wood. I. 3 hr. PR: For. 131. Physical and mechanical properties of wood; testing, machining, gluing, finishing, and special processing of wood.

133. Lumbering. II. 3 hr. PR or conc: For. 21. Logging practices and lumber manufacture, logging and mill equipment, important factors affecting lumber grades.

134. Forest Products. II. 3 hr. PR or conc: For. 131. The production and uses of forest products other than lumber and timber.

135. Seasoning and Preservation. II. 4 hr. PR: For. 131. Purposes, effects, and methods of seasoning and preserving wood.

137. Grading Wood Products. II. 3 hr. PR: For. 21, 131. Inspection methods and application of standard grading rules to forest products, with emphasis on the inspection of hardwood and southern pine lumber.

138. Advanced Lumbering. II. 3 hr. PR: For. 133. Organization of the business operation of logging equipment, records, and cost control.

139. Marketing Forest Products. II. 3 hr. PR: For. 134. Methods of marketing lumber and other forest products in domestic and foreign trade.

140. West Virginia's Natural Resources. II. 3 hr. (Primarily for students enrolled in the College of Education, but open to other upper-division students. Professional forestry students may not take this course for credit.) A survey of policies and practices in development and use of soil, water, forest, wildlife, mineral, and human resources in West Virginia.

141. Wildlife Management. II. 3 hr. PR: Bot. 61 and Biol. 2. Basic principles of handling wildlife as a forest crop, including population dynamics, ecological relationships, social behavior, habitat manipulation, and game administration.

142. Recreational Developments. II. 2 hr. PR: C.E. 6, Summer Camp. Needs of the active and passive recreationist and means of supplying facilities for meeting these needs in public forests.

143. The Forest Range. II. 2 hr. PR: C.E. 5. A survey of basic range management techniques and practices on forest lands, with consideration of range mapping and important forage plants.

144. Forest Zoology. II. 3 hr. PR: Biol. 2 or Zool. 2. The relationship of mammals, reptiles, amphibians, and fish to the forest, with emphasis on the ecology and taxonomy of these groups.

145. Life Histories of Game Animals. II. 3 hr. PR: Biol. 2 or Zool. 2. Field and laboratory studies of game-bird and game-mammal life histories, with special reference to management of populations of these species.

146. Ornithology. II. 2 hr. PR: Biol. 1, 2, or consent. Identification, distribution, and ecology of birds (particularly of forest lands).

151. Forest Protection. I. 2 hr. (Upperclassmen only). Preventative action, preparation activities, and control of forest fires.

170, 171, 172, 173. Forestry Problems. I, II. 1 hr. ea. For seniors only. (4 hr. maximum).

183. Farm Woods Management. II. 3 hr. (Professional forestry students may not take this course for credit.) Characteristics of forest trees; management of farm woods for timber, wildlife, watershed protection, and recreation; measuring and marketing farm timber; plantation establishment.

Division of Home Economics

The Division of Home Economics is located on the Main Campus near the women's dormitories. Offices for staff members, classrooms, and laboratories equipped for the teaching in foods, nutrition, clothing, textiles, home management, child development, and family life are located in Oglebay Hall. Additional facilities include a Nursery School and Home Management House.

The offerings in the Division of Home Economics are designed to fulfill a variety of educational needs. While the training is directed toward the development of professional home economists, the knowledge and skills acquired can be directly applied to the individual's home and family. The plan of work during the first two years provides a broad background of training in the fields of English, literature, natural and social sciences, and an introduction to the basic areas in home economics. The last two years provide opportunities for specialization in a particular vocational field.

CAREERS IN HOME ECONOMICS

Vocational opportunities for home economists far outnumber the trained graduates available for jobs. Those who are employed work in a variety of positions—high school or college teachers, extension workers, dietitians, nursery school supervisors, commercial demonstrators, journalists, and radio and television programmers. Some find opportunities in retailing, interior decorating, or home planning centers. Others choose careers in research or social service.

REQUIREMENTS FOR DEGREES

The Division of Home Economics offers courses leading to the granting of a Bachelor of Science degree in Home Economics and a Bachelor of Arts degree with a major in Home Economics.

BACHELOR OF SCIENCE IN HOME ECONOMICS

The degree of Bachelor of Science in Home Economics will be conferred upon any student who satisfies the entrance requirements and offers 128 hours of college credit and the required grade points, including the courses listed below:

General: English rhetoric, literature, and Speech (not more than 3 hr. of speech), 12 hr.; chemistry or physical science, 8 hr.; history, psychology, social studies, economics (with work in at least two of these fields), 9 hr.; biological science, 8 hr.; physical education, 4 hr.; TOTAL: 41 hours. Humanities 1 and 2 may be substituted for History 1 and 2.

Home Economics: Foods and nutrition, 6 hr.; management and family life, 7 hr.; textiles and clothing, 5 hr.; applied art, 4 hr.; child development, 3 hr.; electives in home economics, 15 hr.; TOTAL: 40 hours.

General Electives: TOTAL: 47 hours.

Fifty-eight (58) hours, to include Home Management Laboratory (H.E. 234), must be selected from upper-division courses. A grand total of 128 hours is required for the Bachelor of Science Degree in Home Economics.

Sufficient electives are allowed to permit the student to satisfy the requirements for a first-class high-school certificate to teach in West Virginia, or to fulfill professional requirements for apprenticeship, internship, or similar professional experiences in a variety of fields such as institution management, hospital dietetics, food and textile research, retailing, extension work, and government services.

It is suggested that students carry a maximum of 16 hours while living in the Home Management House, or while doing student teaching.

A student who is working for room and board may not carry more than 14 hours until she has demonstrated that she is able to maintain a "C" average.

A.B. DEGREE WITH MAJOR IN HOME ECONOMICS

Students who wish to offer home economics as a major in the College of Arts and Sciences are referred to the information concerning the Bachelor of Arts degree with a major in home economics in the *Announcements* of the College of Arts and Sciences.

Classification of Students

To be classified as a regular freshman, a student must fulfill all entrance requirements. To be classified as a sophomore, she must have completed 25 hours; as a junior, 58 hours; as a senior, 92 hours.

SUGGESTED CURRICULUM FOR FIRST TWO YEARS

FIRST YEAR				SECOND YEAR			
First Sem.	*Hr.*	*Second Sem.*	*Hr.*	*First Sem.*	*Hr*	*Second Sem.*	*Hr.*
English 1	3	English 2	3	English 3, 4 or 5	3	Speech 3, 6 or 11	3
Chem. 1*	4	Chem. 2*	4	Home Ec. 15	4	Zool. 151	4
(or)		(or)		Home Ec. 12	3	Home Ec. 23	2
Phys. Sci. 1	4	Phys. Sci. 2	4	Biol. 1	4	Home Ec. 114	2
History 1	3	History 2	3	Econ., Sociol.		Phys. Ed.	1
(or)		(or)		(or)		Econ., Sociol.	
Humanities 1	4	Humanities 2	4	Soc. Sci. 3 or 4		(or)	
Home Ec. 1	2	Home Ec. 2	2	Phys. Ed.	1	Soc. Sci.	4
Home Ec. 4	2	Home Ec. 3	2				
Phys. Ed.	1	Phys. Ed.	1				

*Prospective dietitians should elect Chem. 1 and 2.

THE CURRICULUM FOR TEACHERS

Students who wish to obtain a certificate to teach home economics in high school must meet requirements of the State Board of Education and of the College of Education. Recommendation for certification is made by the Dean of the College of Education. For requirements, see the bulletin, *Teacher Training Programs.*

West Virginia University has been approved by the State Department of Education and the U. S. Office of Education to train teachers of vocational homemaking.

All students who meet requirements for vocational certificates in home economics as set forth in the bulletin, *Teacher Training Programs,* will be recommended for vocational certificates.

Students transferring from other institutions should do so not later than the junior year. A minimum residence of the entire senior year is required, and students with irregular schedules will require a longer period of time.

MAJOR OPTIONS IN HOME ECONOMICS

The Teaching Major

(See *Teacher-Training Programs—Requirements for Certification* bulletin for course requirements.)

Other Majors

Advisers will help students select courses which will prepare them for vocations in nutrition and dietetics, textiles, clothing and retailing, extension service, utilities companies, or for pursuing work at graduate levels.

Two-Year Courses in Home Economics

The Division of Home Economics offers a two-year course designed to meet the needs of those students who do not wish to spend four years working toward a

degree, but who desire some college training. The two-year curriculum is designed to give students some information, appreciation, and understanding to help them function successfully as homemakers and citizens. The course as planned is broad and flexible and permits a wide choice of electives to meet individual needs.

The entrance requirements for the two-year course are the same as for the regular four-year course. Students who complete satisfactorily the 64 semester hours, including the basic requirements and at least 22 hours in Home Economics will be granted a Certificate in Home Economics.

A student enrolled in the two-year course may transfer appropriate credit hours to a four-year course leading to a degree, provided a grade-point average of 2.5 or better has been maintained. A student pursuing the four-year curriculum may transfer to the two-year curriculum provided the transfer is made prior to or immediately following completion of two years of study. In either case, the student must meet the requirements of the curriculum to which transfer is made.

THE TWO-YEAR CURRICULUM

	Hr.
English 1 and 2	6
Social Studies,* or Physical Science, or Biological Science	8
Social Studies Chosen from the following: Political Science; Economics; Sociology; History; Psychology.	6
Home Economics At least one course from each of the following areas: Related Art (3 and 23 suggested); Clothing and Textiles (2 or 12 and 17 and 102); Child Development; Foods and Nutrition (1 and 15 suggested); Management (to include 114).	22
Physical Education or Health Education	2
Electives from any field for which student can qualify	20
	64

*General course in Social Science.

COURSES OF INSTRUCTION IN HOME ECONOMICS

1. Students in the College of Arts and Sciences who major in home economics must meet the requirements of that college and also the Core requirements of the Division of Home Economics.

2. Students who wish to obtain the high-school certificate to teach home economics must meet the requirements of the State Board of Education, the College of Education, and the Division of Home Economics. The B.S.H.E. degree in the College of Agriculture, Forestry, and Home Economics is planned to allow sufficient electives to meet these requirements.

3. Students from other colleges may elect home economics courses provided they can meet the prerequisites.

FOODS AND NUTRITION

Associate Professors Yearick and Jones; Assistant Professor Graf.

1. Sec. 1. Elementary Nutrition. I, II. 3 hr. Essentials of adequate diet; applications are made with particular reference to needs of college students.

1. Sec. 2. Elementary Nutrition. I. 3 hr. Advanced section of H.E. 1 for those who qualify on basis of placement test.

15. Food Selection and Preparation. I, II. 3 hr. PR: H.E. 1, Chem. 2, or Phys. Sci. 2, or consent. (2 lec., 2 lab.). Basic principles of food selection, care and prepa-

ration. Emphasis is placed on the chemical and physical properties of foods and reactions which occur during processing.

21. Nutrition and Foods for Nurses. I. 3 hr. Fundamental principles of human nutrition and of food preparation. Content of course is that given in "Teaching Dietetics of Student Nurses," by American Dietetics Association.

101. Nutrition. I. 3 hr. PR: Biochem. 139 or consent. (2 lec., 1 lab.). Food needs as affected by such factors as age, sex, and activity; nutritive value of common foods; planning of adequate diets at different cost levels.

105. Planning and Serving Family Meals. I or II. 2 hr. A practical course in food selection, preparation, and service. Course is based on student needs and interests. (Not open to Home Economics students.)

115. Meal Planning, Preparation, and Service. I, II. 3 hr. PR: H.E. 15 or consent. (1 lec., 1-3 hr. lab.). Selection and purchase of foods; planning, preparing and serving meals with emphasis on time, energy, and money management.

121. Nutrition Work with Children. II. 3 hr. PR: H.E. 106 or conc: H.E. 106, 115. Problems involved in planning, preparing, and serving children optimum diets. Opportunity for students (1) to prepare noon meals for University Nursery School children; (2) to observe a number of school-lunch programs in and near Morgantown.

125. Foods for Special Occasions. II. 2 hr. PR: H.E. 15 or consent. Unusual foods and unusual methods of preparing and serving everyday foods. Preparation, organization, and management involved in food for social functions. Offered in 1963-64 and alternate years.

181. Problems in Nutrition. I, II. 1-4 hr. PR: Consent.

185. Problems in Foods. I, II. 1-4 hr. PR: Consent.

201. Diet Therapy. II. 3 hr. PR: H.E. 101, Zool. 171. Adaptations of normal diet for diseases whose prevention or treatment is largely influenced by diet. Offered in 1962-63 and alternate years.

205. Experimental Cookery. II. 3 hr. PR: H.E. 15, Chem. 131. (1 hr. lec., 2 2-hr. labs.). Utensils, ingredients, temperature, manipulation, and cooking methods as they affect quality of cooked products. Offered in 1962-63 and alternate years.

211. Readings in Nutrition. II. 2 hr. PR: H.E. 101 or consent. Review of current literature and of present research. Topics depend upon needs and interest of class members.

215. Food Preservation. I. 2 hr. PR: H.E. 15. (2 2-hr. labs.). Fundamental principles involved and actual experience in various methods of food preservation. Offered in 1963-64 and in alternate years.

221. Community Nutrition Problems. I. 2 hr. PR: Consent. (2 hr. lec., field work.) Includes consideration of organizations and agencies through which these problems many be solved.

231. Nutrition Education for Elementary Teachers. II. 2 hr. PR: Consent. Fundamental principles of human nutrition with special emphasis on the needs of children. The laboratory period will be used for evaluation and development of instructional aids and teaching units.

281. Problems in Nutrition and/or Diet Therapy. I, II. 1-4 hr. PR: Consent.

285. Problems in Foods. I, II. 1-4 hr. PR: Consent.

301. Graduate Nutrition Seminar. I, II. 1 hr. PR: H.E. 101 and consent. Review and discussion of recent progress in foods and nutrition research.

361. Nutrition Research. I, II. 6 hr. PR: H.E. 101, Chem. 6 or 106 or consent. Research in foods and/or nutrition.

INSTITUTION MANAGEMENT

Staff.

108. Quantity Cookery. I. 3 hr. PR: H.E. 115. (1 lec., two 3-hr. labs. arranged). Application of principles to preparation of food in large quantities. Use of standardized formulae, calculation of costs, and use of institution equipment. University Cafeteria used as a laboratory. Field trip included.

118. Institution Accounting. II. 2 hr. Current procedures in accounting for institutions. Preparation of budgets, food-control records, financial statements, and reports.

128. Institution Buying. I. 2 hr. PR: H.E. 108. Producing areas, distribution of food products, specifications, storage and food practices in quantity buying. Observation in local wholesale markets, warehouses, and storage units. Offered in 1962-63 and alternate years. Tour of market facilities in Pittsburgh area required.

138. Institution Organization and Management. II. 3 hr. PR: H.E. 108. Principles of organization and management of food service. University Cafeteria used as laboratory. Field trip included.

148. Laboratory Practice in Institution Management. I, II. 2 hr. PR: H.E. 138 and consent. (Arranged). Experience under supervision in planning, preparing and serving food in an institution. Selection of place and type of experience to be determined by needs of students.

188. Problems in Institution Management. I, II. 1-4 hr. PR: Consent.

288. Problems in Institution Management. I, II. 1-4 hr. PR: Consent.

TEXTILES AND CLOTHING

Associate Professor Franck; Assistant Professor Dietrich.

2. Elementary Clothing. I, II. 2 hr. Problems in selection and construction of clothing. For freshmen and others who do not pass placement test.

12. Intermediate Clothing. I, II. 3 hr. PR: H.E. 2 or exemption of H.E. 2 by placement test. Development of judgment in selection and skill in construction. Emphasis on pattern alteration and fitting. Garments construction in woolen, synthetic, cotton fabrics. One child's garment included.

17. Textiles. I, II. 3 hr. Lecture and laboratory combined. Textile fibers and fabrics studied with view to their use in dress and in the home. Characteristics of the major fibers and their suitability to various uses. Study of standard and novelty materials with emphasis on appropriate use and care.

102. Clothing Selection. I. 2 hr. PR: H.E. 3 or consent. Two lectures. Selection of clothing for whole family from viewpoint of design, color, and economy. Clothing inventories and buying plans.

132. Clothing Techniques. II. 2 hr. Not open to home economics students. Techniques for simple garment construction, remodeling, alteration, and repair. Problems adapted to needs of individual students. Especially planned for Arts and Sciences students and young homemakers.

182. Problems in Clothing Construction. I, II. 1-4 hr. PR: Consent.

212. Advanced Clothing Construction. II. 2 hr. PR: H.E. 233 or consent. Offers opportunity for creative expression and for understanding of pattern design through

handling of fabrics on dress form. Costumes are designed, draped and constructed.

222. Tailoring. II. 3 hr. PR: H.E. 12, 17. Tailoring of suits and coats. Emphasis placed on professional techniques, advanced fitting and construction of garments. Second garment constructed by fast method techniques.

282. Problems in Clothing. I, II. 1-4 hr. PR: Consent.

117. Textile Buying. II. 2 hr. PR: H.E. 17. Lecture and laboratory combined. Buying of textiles for all types of clothing and for the household. At least one field trip required.

187. Problems in Textiles. I, II. 1-4 hr.

217. Readings in Textiles. I. 2 hr. PR: H.E. 17. Review and discussion of current literature reporting recent research in the field.

287. Problems in Textiles. I, II. 1-4 hr. PR: Consent.

APPLIED ART

Instructor Kulman.

3. Art Applied to Personal Problems. I, II. 2 hr. Principles of design and color applied so as to help college students meet problems of daily living. Problems may include room arrangement, clothing design, etc.

23. Present Day Housing. I, II. 2 hr. PR: H.E. 3 or consent. Factors to be considered in selecting a home and furnishings, including equipment, for families of different income levels. Special attention to low cost housing. Laboratory practice in improving rooms, apartments, and houses, using materials commonly found in rural communities and small towns.

113. House Decoration. II. 3 hr. Not open to Home Economics students. (2 lec., 1 lab.). Materials and furnishings that go into decorating and furnishing a home, with emphasis on cost, buying, and reconditioning.

123. Home Planning and Furnishings. I, II. 4 hr. PR: H.E. 23. (2 lec., 2 labs.). Fundamentals of wise planning to meet family needs; understanding of house structure and home needs. Discussions on home decorating based on various income levels and suitability to various communties and families.

133. Home Crafts. I, II. 2 hr. Experience in simple crafts, using such materials as leather, plastic, metal, paper, thread, and fabric for creation of useful and beautiful objects. Equipment and materials used are those readily available in home, school, and camp situations.

183. Problems in Related Art. I, II. 1-4 hr. PR: Consent.

233. Costume Design. I. 2 hr. PR: H.E. 2, 117. Techniques of figure and fashion drawing. Designing for individuals of various types and ages. Some history of costume included.

283. Problems in Related Art. I, II. 1-4 hr. PR: Consent.

CHILD DEVELOPMENT AND HEALTH

Professor Brown; Assistant Professor Ayersman.

106. Child Development. I, II. 3 hr. PR: Psych. 1 or 3, or Ed. 105 or 106. (2 lec.). Child from toddler through the nursery-school age. University Nursery School used for observing pre-school children. 2 hr. per week of observation and participation.

116. Home Nursing. II. 2 hr. (1 lec., 1 2-hr. lab.). Practices to promote family health and care of minor illnesses. Offered 1962-63 and alternate years.

126. Infant Development. I. 2 hr. (1 lec., 1 lab.). Development characteristics and problems during the prenatal period and the first eighteen months with implications for guidance and care. Strong recommendation to precede enrollment in H.E. 234.

186. Problems and Participation in Nursery School. II. 1-3 hr. PR: H.E. 106. Directed experience in working with children in a nursery school situation. Laboratory and conference.

206. Observation and Participation in Nursery School. II. 1-3 hr. PR: H.E. 106. Directed experience in working with children in a nursery school situation. Laboratory and conference.

266. Needs of Adolescents. I, II. 3 hr. A study of adolescent needs as met by the home with contributions of other agencies such as church, school, and youth groups. Physical, social, and integrative needs will be considered from the standpoint of needs of all family members as well as the individual.

276. Seminar in Child Development. II. 2 hr. PR: Senior standing and H.E. 106. A review and discussion of recent literature pertaining to child development. Offered in 1963-64 and alternate years.

286. Problems in Child Development. I, II. 1-4 hr. PR: Consent.

376. Thesis in Child Development. I, II, S. 6 hr. PR: H.E. 309 and consent. Thesis for the degree of Master of Science in Home Economics.

HOME MANAGEMENT AND FAMILY LIVING

Professor Nolan; Assistant Professor Taylor.

4. Elementary Management. I, II. 2 hr. The application of management to the use of time, money, energy, and other resources to achieve individual goals.

104. Nutrition and Home Management. II. 3 hr. Planned to meet needs of social work majors. Offered in 1962-63 and alternate years. Not open to home economics students.

114. Management of Family Living. I, II. 3 hr. Influence of home conditions on families and family members. In considering ways of meeting everyday problems of families, an attempt will be made to apply findings of science and techniques of management in such ways as to help families achieve satisfaction in living. Open to non-majors.

124. Demonstration Techniques. I, II. 2 hr. PR: Minimum of 4 hr. in each of four areas of home economics, or consent. Lecture demonstration as means of presentation of demonstrations suitable for secondary schools, and use with adult groups.

134. Principles of Home Management. I, II. 2 hr. An intermediate course in management as applied to the family and homemaking. Detailed consideration of family goals and resources.

184. Problems in Home Management and/or Family Living. I, II. 1-4 hr. PR: Consent.

214. Family Economics. I, II. 2 hr. PR: 13 hr. of H.E. courses. Management of the family's money resources. Consideration of the economic problems of families, of planned spending and saving, and of the role of the consumer. Open to non-majors.

234. Home Management Laboratory. I, II. 3 hr. PR: H.E. 15, 106, 114; H.E. 115 recommended. Arranged. A residence course designed to provide opportunity to apply management in a realistic homemaking situation to develop satisfying relationships in a family-like atmosphere, and to use information and skills learned in other courses.

254. Household Equipment. II. 2 hr. Selection, arrangement, use and care of equipment for various situations and for different income levels. Laboratory and discussion.

264. Family Development. I, II. 2 hr. PR: H.E. 114 or consent. A professional course designed to prepare students for work with families in their varying stages of development and different socio-economic levels. Involves intensive study of family relationships as affected by differing stages of the family life cycle, from beginning family through the aging couple. Lecture, discussion, and observation of families. Open to non-majors.

284. Problems in Home Management. I, II. 1-4 hr. PR: Consent.

HOME ECONOMICS EDUCATION

Professors Noer and Brown.

Ed. 262. Vocational Home Economics in Secondary Schools. I, II. 3 hr. PR: 6 hr. of Education and 30 hr. of home economics.

209. Evaluation in Home Economics. II. 3 hr. PR: 30 hr. of home economics, 7 hr. of Education. Experience in selecting, devising, and using evaluation devices for appraising student progress toward desired goals in home economics education. Offered in 1962-63 and alternate years.

219. Adult Education in Homemaking. I. 3 hr. PR: 30 hr. of home economics and 7 hr. of Education. Current trends and present activities. Organization of adult classes; development of unit outlines; consideration of teaching methods; illustrative material and bibliography.

249. History of Home Economics. I, II. 1 hr. One lecture.

279. Seminar in Home Economics Education. I. 2 hr. PR: Senior standing and 6 hr. of Education. A review and discussion of recent literature pertaining to home economics at the junior and senior high school levels and the college and adult levels.

309. Research Methods. I, II, S. 2 hr. Adaptation of research techniques to problems in home economics. For students writing problems or thesis. Must be taken at West Virginia University.

319. Home Economics Curriculum. II. 3 hr. PR: Experience in teaching home economics and consent. Selection and organization of learning experiences in home economics. Practices and techniques currently used for curriculum planning and reconstruction. Offered in 1963-64 and alternate years.

329. Supervision in Home Economics. II. 2 hr. PR: Teaching experience and consent. Designed for home economics teachers preparing to serve as supervising teachers in "off-campus" training centers. Function of supervision and organization of supervised teaching program. Techniques for helping students in training for teaching homemaking. Offered in 1962-63 and alternate years.

360. Problem Report for the Degree of Master of Home Economics. I, II, S. 1-3 hr. PR: H.E. 309.

389. Problems in Home Economics Education. I, II. 1-4 hr. PR: Consent.

HONORS PROGRAM

Professors Brown, Noer; Associate Professor Yearick.

100. Home Economics Honors Program. 3 hr. PR: Second-semester junior standing; at least 2 academic years in residence at West Virginia University; over-all grade-point average 3.0 or better; grade-point average in Home Economics courses 3.20 or better. Individual special problems for undergraduates of

second semester junior standing who show special ability and interest in one of the following fields: child development, home economics education, or nutrition. Admission dependent only upon the recommendation of the adviser and the Honors Course Committee. Hours arranged.

110. Home Economics Honors Program. 3 hr. PR: First-semester senior standing; over-all grade-point average 3.0 or better; grade-point average in Home Economics courses 3.25 or better, and Home Economics 100. Individual special problems for undergraduates of first semester senior standing who show special ability and interest in one of the following fields: child development, home economics education, or nutrition. Admission only upon the recommendation of the adviser and the Honors Course Committee. Hours arranged.

120. Home Economics Honors Program. 3 hr. PR: Second-semester senior standing; over-all grade-point average 3.0 or better; grade-point average in Home Economics courses 3.25 or better; Home Economics 110. Individual special problems for undergraduates of second semester senior standing who show special ability and interest in one of the following fields: child development, home economics education, or nutrition. Admission only upon the recommendation of the adviser and the Honors Course Committee. Hours arranged.

The College of Arts and Sciences

GENERAL INFORMATION

Organization and Purpose

The College of Arts and Sciences includes a lower division and an upper division. The lower division consists of work of the first and second years, and the upper division consists of work of the third and fourth years.

Instruction in the College is administered through the following departments and integrated studies:

Art
Biology
Chemistry
Classics
Economics
English Language and Literature
Geology and Geography
Germanic Languages and Literature
History
Home Economics
Library Science
Mathematics and Astronomy
Nursing Education
Philosophy and Psychology
Physics
Political Science
Romance Languages and Literature
Sociology
Social Work
Speech
Integrated Studies:
  Humanities
  Social Sciences
  Biological Sciences
  Physical Sciences
  Communications

Main Objectives

The curriculum of the College of Arts and Sciences has these main objectives:

1. *General Culture.* Work of the lower division is intended to complete what is usually termed "a general education." It rounds out the program of studies pursued in high school and promotes full development of the student as an individual and as a member of society. Ideally, the student should undergo a well-proportioned development intellectually, spiritually, physically and emotionally. The end of such development should be an inner balance or stability on the basis of which further growth can take place. Development of the individual as a member of society is to be measured in terms of his or her usefulness and sense of responsibility to the social order. The student should develop the capacity of intellectual participation as a citizen in the community, state, county, and world. A general education should, therefore, provide for all students a meaningful experience appropriate to the individual and social needs which all citizens have in common as members of a free society in the contemporary world.

2. *Specific Attributes*: Most of the attributes of a general education can be placed in one of three categories: attitudes, areas of knowledge, and skills.

The following attitudes should be attained as a result of a general education:

(1) An attitude of tolerance or open-mindedness, characterized by a cosmopolitan outlook that will enable the student to see beyond the limits of his own profession, his own economic status, and his own country;
(2) An attitude of truth-seeking characterized by scientific objectivity and motivated by intellectual curiosity;
(3) An attitude of intelligent appreciation towards nature and the arts that will, as far as the student's own endowments will permit, help him in his esthetic and ethical choices; and
(4) An attitude of dispassionate self-appraisal, based on an understanding of his own nature and characterized by an awareness of his own mental strength and weakness.

The areas of knowledge which should be common possession of all educated persons may be conveniently grouped into two divisions:

(1) A knowledge of man as a social and intellectual being, of his place in contemporary civilization, and of that civilization's place in the history of man.
(2) A knowledge of man as an organism and of man in his relation, direct or indirect, to the biological and physical environment in which he lives.

Three basic skills are regarded as indispensable to all educated persons:

(1) That of self-expression or communication, involving writing, speaking, reading, and listening.
(2) That of calculation, that is, a knowledge of, and some skills in, basic mathematics.
(3) A familiarity with at least one foreign language, not only as a useful skill, but also as a means of promoting tolerance and sympathetic understanding of peoples who do not speak our language.

Buildings and Equipment

The principal buildings used by the College of Arts and Sciences are the Physics Building, Woodburn Hall, Chemistry Building, Science Hall, Armstrong Hall, Brooks Hall, Reynolds Hall, and Oglebay Hall.

The central structure of the present Woodburn Hall was built in 1876, the north wing in 1900, and the south wing in 1910.

The Chemistry Building, a modern fireproof structure completed in 1926, serves the Department of Chemistry and the Department of Classics.

Armstrong Hall, a large four-story classroom building, was completed in the spring of 1950 and houses the Department of English, German, and Romance Languages. Sociology and Social Work are housed in Engineering Building No. 1.

Brooks Hall, a modern five-story building, was put into service in the fall of 1950. It houses the Department of Biology and includes classrooms, laboratories, and excellent facilities for research work in the biological field.

The Physics Building was occupied in September, 1952. It is a six-story fireproof building, modern in every respect and equipped with machine shops, lecture rooms, and laboratories adapted to research in sound microwaves, atomic physics, and radioacitvity. There is a special Radiation Laboratory on the second floor, open to all departments in the University interested in biophysics, biochemistry, agricultural chemistry, and medicine. This building also houses the Department of Mathematics.

Courses Recommended

Two types of courses are recommended as common means for fostering the attributes of mind and character which a general education should develop in all students enrolled in the lower division of the college. They are:

1. Courses for the promotion of basic skills—calculation and communication.
2. General introductory courses for the elementary but organically integrated study of four fields of human knowledge—biological science, social science, physical science, and the humanities.

Opportunity for Specialization

Work of the upper division is intended to provide intensive study in one or two fields of knowledge. It is based on the belief that an educated man or woman should not only know the fundamentals of several branches of study but should have a rather thorough knowledge of some selected field. In the upper division, therefore, the student concentrates on a major and one or two minors. The curriculum is sufficiently flexible, however, to meet the needs and tastes of individual students without at the same time exposing the student to the disadvantages of the free elective system.

Special Provisions for the Junior Certificate

Experience has shown that students whose average in high-school subjects was below 75 per cent, or students who ranked in the lowest one-fourth of the high-school

graduating class, probably will not succeed in the regular college curriculum. Nevertheless, such students may, by wise selection of studies, profitably spend one or two years in college. Other students for financial or other reasons may not be able to attend college for more than one or two years. It is believed that students in either group may spend their time more profitably taking courses in which they are particularly interested from a cultural or vocational point of view than by following the curriculum leading to the A.B. Degree. Students who are not candidates for the A.B. Degree but who earn 64 hours of college credit and 128 grade points, including general University requirements, in residence at this College will be awarded the Junior Certificate of the College of Arts and Sciences.

The Major Subject

In the upper division the student concentrates on a major and one or two minor subjects (in departments other than the major department) selected from the following list of subjects:

Art	Geology	Physics
Biology	German	Political Science
Botany	History	Psychology
Chemistry	Home Economics	Social Work
Classics	Library Science	Sociology
Economics	Mathematics	Spanish
English	Nursing Education	Speech
French	Philosophy	Zoology

Undergraduate Honors Program

Departments of the College of Arts and Sciences are permitted to establish undergraduate honors programs in conformity with the following provisions:

(a) *Admission to Honors.* Students admitted to honors will normally enter the honors program at the beginning of the second semester of the junior year.

(b) *Eligibility.* The principal qualification for admission to the honors program is ability to pursue independent academic work with vigor and imagination. A student will not qualify for admission to honors unless he has a cumulative grade-point average of at least 3.0 in all courses completed by the end of the fifth semester, and a grade-point average higher than 3.0 in the honor subject.

(c) *Program.* The heart of the honors curriculum is a coherent program of independent work, equal to a 3-hour course per semester, through the last three undergraduate semesters. Normally the honors work in the second semester of the junior year and first semester of the senior year will consist of independent reading or laboratory work, and the writing of reports. In his final undergraduate semester the student will prepare a thesis.

(d) *Examination.* Toward the end of his final undergraduate semester, the student must pass a comprehensive examination in the honors subject. The examination will ordinarily be written, though the Department may also require an oral examination.

Classification of Students

To be classified as a freshman in the College of Arts and Sciences a student must have credit for at least 15 units of entrance requirements; to be classified as a sophomore he must have fulfilled all entrance requirements and have credit for 25 hours of college work; as a junior, 58 hours; as a senior, 92 hours.

Advisers

Lower Division. Each student in the lower division is assigned to an adviser who will assist in registration and who will have general supervision over the work of the student. Electives are chosen and changes in the program are made with the approval of the adviser. Students are urged to confer with advisers in respect to any difficulties or maladjustments in college life.

Upper Division. For transfer to the upper division a student must have completed a minimum of 58 hours and have maintained a grade-point average of 2.0 on all work for which he has received grades (except "W" and "WP").

Each student in the upper division is assigned to an adviser of the department to which the major subject belongs. The program of study and all changes in class assignments must be approved by the adviser.

Student Class Schedules

Each student will schedule his courses according to the curriculum he has chosen. If he is required to repeat courses in which he has previously received a grade of "D" because of a deficiency of grade points (see below), such courses will be scheduled before any others. A second-year student who has not completed all required courses listed in the first year of the curriculum that he is following will be required to schedule such courses before scheduling new courses. A student will not be registered for an upper-division course not provided in his lower-division curriculum unless he has satisfied all lower-division requirements or has scheduled the courses necessary to meet those requirements.

Withdrawal from scheduled classes will be permitted in an order reversed in priority from that stated in the preceding paragraph.

Maximum and Minimum Work

The maximum number of hours per semester for which a student may register is 18, the minimum is 14. A student in the upper-division may, however, with the approval of his adviser, register for a maximum of 20 hours per semester provided that during the semester immediately preceding his registration he has attained an average of 3.0, and that the load was not less than 14 hours.

Minimum Scholastic Standards

Normal progress toward upper-division status and graduation requires maintenance of a grade-point average of 2.0.

A student who lacks 10 or more grade points of having a total grade-point average of 2.0 at the end of any semester or term will be required to repeat courses in which grades of "D" were received to the extent of at least one-half of the semester hours for which he is registerd, if it is possible to schedule such courses.

A lower-division student who, after earning 58 semester hours is ineligible to enter the upper division because his total grade-point average is less than 2.0, will be required to repeat courses in which grades of "D" were received until an average of 2.0 or higher is attained. The number of hours to be repeated shall at least equal the grade-point deficiency or a maximum of 15 hours if it is possible to schedule such courses.

Courses given in other schools or colleges of the University need to be repeated under the operation of these rules only when such courses are required for the student's major.

Probation and Suspension

Any student whose mid-semester grades are below passing in courses amounting to more than half of the total number of semester hours for which he is registered shall be placed on probation for the remainder of the semester. The terms of probation are determined by the scholarship committee.

Any student whose grades at the end of any registration period are below passing in courses amounting to more than half of the total number of semester hours for which he is registered shall be suspended from the University. A freshman subject to the operation of this rule at the end of his first registration period in residence shall be placed on probation for the succeeding registration period.

A student who lacks 10 or more grade-points having a total grade-point average of 2.0 at the end of any semester or term or a lower-division student who, after earning 58 semester hours, is ineligible to enter the upper division because his total grade-point average is less than 2.0 must attain a total grade-point average of 2.0 or higher within two semesters in residence or be suspended.

All actions of the Committee on Scholarship and the Dean that affect the standing of a student shall be reported by the Dean to the Registrar.

Attendance

1. Students shall attend all classes, including laboratory sessions, for which they have enrolled, unless prevented from doing so by illness, injury, authorized University activities, or other reasons approved by the Dean.

2. A student enrolled in a course numbered under 100 shall be reported by the instructor to his adviser and his dean on an appropriate form as soon as his absences exceed the number of class meetings in a normal week.

3. A student whose absences in a course numbered under 100 exceed the number of class meetings in three normal weeks:

(a) shall again be reported to his adviser and to his dean; and

(b) may be barred from the final examination in the course by the instructor, except that the student is permitted to appeal the instructor's decision to the Dean of the College of Arts and Sciences, whose ruling shall be final.

4. Any student in an upper-division course shall be reported to his adviser and his dean as soon as his absences jeopardize his class standing.

5. The instructor may bar a student in an upper-division course from the final examination for excessive absences if:

(a) the student has been reported to his adviser and to his dean for excessive absences, and

(b) after being reported for excessive absences, his subsequent absences exceed the number of class meetings in a normal week, and

(c) the total number of absences exceeds the number of class periods in the course during three full weeks.

The student may appeal the instructor's decision to the Dean of the College of Arts and Sciences, whose decision shall be final.

6. A student who fails to attend a class meeting of a course after twice being reported for absences from it shall again be reported, and thereupon may be suspended from the University by the Dean of the College of Arts and Sciences.

7. Attendance rules shall apply equally, and separately, to lectures, quiz sections, discussion groups, and laboratory sessions.

8. A student who must be absent from class for an extended period of time shall inform his adviser or his dean.

Duties of Advisers

All advisers, upon receipt of reports of excessive absences, shall have conferences with the students concerned and shall make such recommendations and adjustments as are desirable and feasible. If the adviser does not find a satisfactory solution after a conference with the student, he shall report the case to the Dean.

REQUIREMENTS FOR DEGREES

CREDIT DEFINED

The "semester hour" is the standard for computing the amount of work required for graduation in the curricula leading to these degrees. The "hour" represents the amount of work done in one semester (approximately 18 weeks) in one recitation hour with two preparation hours per week.

GENERAL REQUIREMENT FOR ALL DEGREES

Foreign Language. Fewer than 6 hours in an ancient or modern language will not be counted towards any degree, diploma, or certificate in this College unless work in the same language has been offered for entrance.

English. Each undergraduate who is a candidate for an initial baccalaureate degree and who began college work after June 1, 1952, must pass a proficiency examination in English after the beginning of the junior year in order to qualify for graduation. (This examination, however, is not required of students of foreign countries whose native language is other than English). He shall take the examination during the first semester of his junior year, and if not declared proficient, shall repeat the examination as many times as necessary. The examination shall be administered by the English Proficiency Board.

Electives. At least 6 hours must be taken in each subject offered as a free elective, but not more than 9 hours in isolated courses of less than 6 hours each, selected with the approval of the adviser, may be offered.

In addition to regular elective work in the College of Arts and Sciences which is offered by the faculties in the other colleges, work not to exceed 15 hours in the College of Law, College of Agriculture, Forestry, and Home Economics[1], College of Commerce, College of Engineering and the School of Mines,[2] School of Music,[3] School of Physical and Health Education, Recreation, and Safety,[4] School of Journalism, or 6 hours of upper-division work in Military Science or Air Science, and 20 hours in the College of Education; may be included in the list of elective credits offered by students in the College of Arts and Sciences. The total number of hours elected from other colleges shall not, however, exceed 24 hours in all.

The course in general biochemistry (Biochem. 239) is available (without additional fees) in the School of Medicine.

Major Subjects. At least 88 hours of the total offered for graduation with an A.B. degree must be exclusive of the work done in the major department, which is normally not more than 40 hours.

ASSOCIATE IN ARTS DEGREE

The degree of Associate in Arts is conferred on the student who completes Option B of the regular course. The core of this program is in four introductory general courses: Humanities, Social Science, Biological Sciences, and Physical Sciences.

Students who complete satisfactorily three area courses, as well as the regular requirements in a foreign language, English composition, physical education general program, and military science or air science (men), will be considered to have met not only the general requirements of the University but also general (i.e., non-departmental) requirements of the College of Arts and Sciences. Students who meet these requirements and have 64 hours of college credit and a grade-point average of 2.0 on all work in residence in the College of Arts and Sciences will be entitled to the two-year degree of Associate in Arts.

BACHELOR OF ARTS DEGREE

The Bachelor of Arts Degree in the College of Arts and Sciences is conferred upon any student who complies with the general regulations of the University concerning degrees, satisfies all entrance, college, and departmental requirements, and completes any one of the following courses of study:

I. Regular course

II. Premedical and Predental courses

[1]In addition to the 15 hours, the following courses in agriculture are regular electives in the College of Arts and Sciences: Agr. Econ. 131 and all courses in entomology, genetics, and plant pathology.

[2]The engineering and mining electives include Chemical Engineering 186, 200, 205, 207, 234, 235, 238, 250, 251; Civil Engineering 1, 2, 5, 6, and 115; Electrical Engineering 100, 105; Mechanical Engineering 20, 26, 29, and 121; Theoretical and Applied Mechanics 101, 102, and 104; and Mining Engineering 106, 109, 204, and 208. In addition the student may elect with the consent of his adviser, when his major is Physics, Chemical Engineering 160.

[3]The music electives include Theory of Music 1, 2, 3, 4, 77, 78, 109, 110, 113, 114, 117, 118, 184, 240, 241, 280, and 281; Ensemble 153, 154, 155, and 156; classes in orchestra instruments 191, 192, 193, and 196. Men's Glee Club, Women's Glee Club, Choral Union, University Choir, and University and Community Orchestra; and piano or voice or violin or organ or band and orchestral instruments.

[4]The electives in physical education are Phys. Educ. 77, 151, 67, 278, and Safety Education 181 and 280.

III. Combined courses:
(a) Arts and Dentistry
(b) Arts and Medicine

In order to qualify for the degree of Bachelor of Arts in the College of Arts and Sciences, at least 128 semester hours of credit must be presented. A minimum of 124 hours must be established in subjects exclusive of credit earned in required Physical Education, required Military Science or Air Science, and English 0. (Math. 2, completed after Sept. 1, 1962, will not be included in the 124 hours.)

Students transferring to West Virginia University from other institutions should ordinarily do so not later than the beginning of the third year. Such students must meet all the requirements of the lower division. All lower-division deficiences must be met as soon as possible after admission to the College of Arts and Sciences, whereupon such student may register regularly in the upper division.

I. Regular Course (128 Hours) *

LOWER-DIVISION CURRICULUM

Option A:

(a) *General University Requirements*:
Military Science or Air Science[5]—8 hours.
Physical education (men)[6]—2 hours.
Physical education (women)[6]—4 hours.

(b) *Science.* At least 8 hours of a laboratory science chosen from the following: biology, botany, chemistry, geology, physical science, physics, psychology, and zoology.

(c) *Foreign Language.* To be eligible for graduation a student must have completed twelve semester hours in a foreign language in college or two units for entrance and six hours beyond courses 1 and 2 in the same language in college.

(d) *English Composition.* Ordinarily 6 hours of English composition (English 1 and 2) will be required of all freshmen. In case a freshman is not qualified to meet the requirements in English 1, as shown by placement or other tests, he (or she) will be assigned to English 0, which carries 3 hours of University credit. Upon the successful completion of the work in English 0, the student will register for the regular work in English 1 and English 2.

(e) *Distribution Requirements*: A selection of one subject from each of the following groups to total 24 hours is required. At least 12 hours shall be from lower-division courses.
(1) At least 6 hours of History or of Humanities (general course).
(2) At least 6 hours of Economics, of Political Science, or of Social Science (general course).
(3) At least 6 hours of Literature (from the English language or a foreign language) or of mathematics.
(4) At least 3 hours of Art, of Home Economics, of Library Science, or of Speech.
(5) At least 3 hours of Geography, of Philosophy, of Sociology, or of a laboratory science not chosen in (b) above.

(f) *Electives.* Electives shall be chosen, under the supervision of the adviser, to make a total of 64 hours. Ordinarily freshmen should register for required courses. Electives should be used in the second year chiefly in meeting the preliminary requirements of the departments in which the students expect to do work of the major (or minors) in the upper division.

*See second paragraph under "Bachelor of Arts Degree," above.

[5]Military science or air science instruction is required of all male students except those who at the time of matriculation are 23 years of age or have completed no less than 58 hours of work, and all who have credit for 8 hours of military science or air science or 1 unit of entrance credit in miltiary academy. Students must register for military science or air science upon their entrance into the University and continue in the course until the full requirement has been met or until a regular exemption card is filed in the Office of the Registrar.

[6]Two hours of physical education general program for men, to be taken during the first year of residence, and four hours of physical education general program for women, to be taken during the first and second years in residence, are required for graduation of students presenting fewer than 58 semester hours, unless previous credit has been allowed.

Option B: General Course Program of Integrated Studies (64 *Hours*)

A sample schedule of courses for students enrolled in the whole program of Integrated Studies and planning to complete it in two years follows:

FIRST YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
Humanities 1	4	Humanities 2	4
Biological or Physical Sciences 1	4	Biological or Physical Sciences	2-4
English 1	3	English 2	3
Foreign Language	3	Foreign Language	3
Phys. Educ.	1	Phys. Educ.	1
Mil. or Air Sci. 1	2	Mil. or Air Sci. 2	2
Electives	1-3	Electives	1-3
Maximum hours allowed	18	Maximum hours allowed	18

SECOND YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
Social Sci. 1	4	Social Sci. 2	4
Phys. Ed. (W)	1	Phys. Ed. (W)	1
Mil. or Air Sci. 3	2	Mil. or Air Sci. 4	2
Electives[7]	11-13	Electives[7]	11-13
Maximum hours allowed	18	Maximum hours allowed	18

UPPER-DIVISION CURRICULUM

1. *A major sequence* of 18 to 24 hours of upper-division courses, preceded by the proper lower-division courses prescribed as preparation for the major. This work should represent a coherent and progressive sequence of courses as outlined in the departmental announcements. This major subject will be selected when the student registers in the upper division, but the student must plan the work in the lower division in such a way as will meet the departmental requirements for the major and minor.
2. *A minor sequence* of 9 to 12 hours of upper-division courses, preceded by proper lower-division courses, in some department closely related to the major department. At the option of the major department a second minor of 6 hours may be required in a second department closely related to the major department.
3. *Distribution Requirements* to complete a total of 24 hours if Option A was used in the Lower Division Curriculum. See (c) page 16.
4. *Electives,* under supervision of the departmental adviser, to make a total of 128 hours. A minimum of 124 hours must be established in subjects exclusive of credits earned in required Physical Education, required Military Science or Air Science, and English 0. (Math. 2, completed after Sept. 1, 1962, will not be included in the 124 hours). At least 58 hours must be selected from the upper-division courses.

II. Premedical and Predental Courses (128 Hours) *

The following sequence of courses is worked out for the guidance of students who are preparing for the study of Medicine, Dentistry, and the related professions. All of the required subjects are included. While the pre professional student is meeting the entrance requirements of professional schools, committees on admission of professional schools prefer that he use his elective hours to secure broad, general training rather than to secure a large number of credits in any one special field. Leading medical and dental educators in the United States today are definitely in favor of a good general training rather than extensive specialization in the so-called premedical sciences.

It is recommended that all premedical and predental students plan to complete the requirements for the Bachelor of Arts Degree.

FIRST YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
English 1	3	English 2	3
Chem. 1	4	Chem. 2	4
Zool. 1	4	Zool. 2	4
Math. 3	3	Math. 4	3
Phys. Ed.	1	Phys. Ed.	1
Mil. or Air Sci. 1 (M)	2	Elective (W)	2-3
Elective (W)	2-3	Mil. or Air Sci. 2 (M)	2
Maximum hours allowed	18	Maximum hours allowed	18

SECOND YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
Chem. 105 or 115†	3-4	Chem. 115 or Psych. 1	3
Physics 1	4	Physics 2	4
French or German	3	French or German	3
Mil. or Air Sci. 3 (M)	2	Mil. or Air Sci. 4 (M)	2
Phys. Ed. (W)	1	Phys. Ed. (W)	1
Group 1 elective	3	Group 1 elective	3
Group 4 elective	3	Group 4 elective	3
Maximum hours allowed	18	Maximum hours allowed	18

THIRD YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
French or German	3	French or German	3
Group 2 elective	3	Group 2 elective	3
American or English Literature	3	American or English Literature	3
Chem. 163 or 233	4-5	Chem. 238 or elective	4-5
Zool. 231 or elective	5	Zool. 232 or elective	5
Maximum hours allowed	19	Maximum hours allowed	19

FOURTH YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
Chem. 163 or 233 or elective	4-5	Chem. 238 or elective	4-5
Zool. 231 or elective	5	Zool. 232 or elective	5
Electives	8-9	Electives	8-9
Maximum hours allowed	19	Maximum hours allowed	19

†3 hours of upper-division Chemistry may be taken at a later date as a substitute for Chemistry 105.

[7]Students who do not present two units in a foreign language for entrance and who complete six hours in the same language in college must use three hours of electives here to complete the language requirements. Students who expect to complete the four-year course for a baccalaureate degree should use electives to complete prerequisites for a major or minor field while in the lower division

*A total of 128 semester hours of which 124 semester hours must be exclusive of credit in required Physical Education, required Military Science or Air Science and English 0. (Math. 2, completed after Sept. 1, 1962, will not be included in the 124 hours.)

Many medical schools recommend that Chem. 233 and 238 and Zool. 231 and 232 be taken the year preceding entrance to medical school.

Candidates for the A.B. Degree in Premedicine or Predentistry must complete the following minimum number of credit hours in the subjects listed: English, 12 hr. (must include English 1 and 2 and 6 hr. of American or English literature); French or German, 12 hr.; Mathematics, 6 hr. (must include Math. 3 and 4); Chemistry, 26 hr. (must include Chem. 1, 2, 115 or 106, 163, 233, 238 [105 also recommended]); Zoology, 18 hr. (must include Zool. 1 and 2 [Biol. 1 and 2 may be substituted], 231, 232); Physics, 8 hr.; Psychology, 3 hr.; Nonscience group, 30 hr. in addition to specific courses listed above (to be selected from Art, English, Humanities, Economics, Sociology, History, Political Science, Philosophy, Psychology, Speech, Foreign Language, Education, Latin, Home Economics, Music, Library Science, Mathematics, Social Science.) The following Arts and Sciences group requirements must be included in the Nonscience group: Group 1 (6 hr. of History or 6 hr. of Humanities [general course]); Group 2, (6 hr. of Economics or 6 hr. of Political Science, or 6 hr. of Social Science [general course]); and Group 4 (3 hr. of Art or 3 hr. of Home Economics, or 3 hr. of Library Science, or 3 hr. of Speech). Arts and Sciences Groups 3 and 5 are included in specific departmental requirements. A minimum of 128 hours including 58 hours of upper-division courses are required for the degree.

III. Combined Courses

Special Requirements

Candidates for a combined A.B. degree (Premedicine or Predental) are required to meet the special provisions of one of the two groups listed below. These requirements to be in addition to all other regulations prescribed in the particular curriculum for which the student is enrolled.

(a) A minimum of 96 hours of credit must be completed in the College of Arts and Sciences of West Virginia University of which 32 hours must be from the upper-division courses. If prior approval from the Scholarship Committee or the Dean of the College is obtained by formal petitioning at the time of acceptance into an accredited professional school or college, the successful completion of the first full year of the professional course may be offered in lieu of the senior work in residence. An official certification of the professional work must be made by the Registrar of the professional school to the University Registrar.

(b) A minimum of 64 hours of credits must be completed in the College of Arts and Sciences of West Virginia University of which 32 hours must be from the upper-division courses. If prior approval is obtained from the Scholarship Committee or the Dean of the College by formal petitioning at the time of acceptance into a professional school or college of West Virginia University, the successful completion of the first full year of professional work may be presented toward requirements for graduation.

ARTS AND MEDICINE OR DENTISTRY (128 *HOURS*)

(Recommended Curriculum for a Combined Course in Arts and Medicine or Dentistry)

Students who enter a School of Medicine or a School of Dentistry after the completion of a minimum of 107 hours (men) or 101 hours (women), of which 32 hours must be from the upper-division courses, of the premedical and predental curriculum and who have satisfied all provisions of the College of Arts and Sciences regulations governing combined course programs may receive the Bachelor of Arts Degree upon the successful completion of the first year of medicine or dentistry.

A student who is a candidate for the A.B. degree under the provisions of this curriculum must submit, at the time of his acceptance and prior to his registration in an accredited School of Medicine or School of Dentistry, a petition for the degree to his adviser who will forward it with his recommendations to the Scholarship Committee. If the petition is approved, the candidate will be recommended for graduation upon receipt of certification from the professional school by the Registrar of the University to the effect that he has successfully completed the first year of medicine or dentistry.

FIRST YEAR

Same courses as required in the Curriculum for A.B. degree in Premedicine or Predentistry.

SECOND YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
Chem. 115 or Psych. 1	3	Chem. 115 or Psych. 1	3
Physics 1	4	Physics 2	4
French or German	3	French or German	3
Mil. or Air Sci. 3 (M)	2	Mil. or Air Sci. 4 (M)	2
Phys. Ed. (W)	1	Phys. Ed. (W)	1
Hist. 1 or 52	3	Hist. 2 or 53	3
Art 115, Speech 11, or Pol. Sci. 1	3	Art 115, Speech 11, or Pol. Sci. 1	3
Maximum hours allowed	18	Maximum hours allowed	18

THIRD YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
French or German	3	French or German	3
American or English literature	3	American or English literature	3
Chem. 163	4	Pol. Sci. (upper division)	3
Chem. 233	4	Chem. 238	4-5
Zool. 231	5	Zool. 232	5
Maximum hours allowed	19	Maximum hours allowed	19

The following minimum number of credit hours must be completed in the courses listed: English, 12 hr. (must include English 1 and 2 and 6 hr. of American or English literature); French or German, 12 hr.; Mathematics, 6 hr. (must include Math. 3 and 4); Chemistry, 23 hr. (must include Chemistry 1, 2, 115 or 106, 163, 233, 238); Zoology, 18 hr. (must include Zool. 1 and 2 [Biology 1 and 2 may be substituted], 231, 232); Physics, 8 hr.; Psychology, 3 hr.; Nonscience group, 15 hr. (must include Group 1, 6 hr. of History or 6 hr. of Humanities [general course]); Group 2, 6 hr. of Economics or 6 hr. of Political Science or 6 hr. of Social Science [general course]; and Group 4, 3 hr. of Art or 3 hr. of Home Economics or 3 hr. of Library Science or 3 hr. of Speech. Groups 3 and 5 of the College of Arts and Sciences requirements are included in specific departmental requirements.

Students in the Combined Course program are urged to attend at least one Summer Session.

BACHELOR OF SCIENCE

The Bachelor of Science Degree is conferred upon a student who complies with the general regulations of the University concerning degrees, satisfies all entrance and college requirements, and completes the requirements of one of the fields listed below.

The minimum credit requirement varies with the several departments offering programs leading to the Bachelor of Science Degree. The minimum requirement shall be no less than 128 hours in any area. A minimum of 124 hours must be established in subjects exclusive of credit earned in required Physical Education, required Military Science or Air Science, and English 0. (Math. 2, completed after September 1, 1962, will not be included in the 124 hours).

For all details of the course of study leading to the Bachelor of Science Degree refer to the pages listed.

1. Chemistry (see page 169)
2. Geology (see page 186)
3. Nursing Education (see page 209)
4. Physics (see page 218)
5. Social Work (see page 231)
6. Speech Correction (see page 237)

A SECOND BACHELOR'S DEGREE

A student who has received a Bachelor's Degree in one department or college of West Virginia University may become eligible for a second Bachelor's Degree by earning an additional 30 semester hours in residence in the College of Arts and Sciences and meeting all requirements, departmental and otherwise, of the second Bachelor's Degree.

PRE-PROFESSIONAL COURSES

Not leading to degrees in the College of Arts and Sciences

(A). Pre-Commerce Curriculum

Candidates for the degrees of Bachelor of Science in Business Administration or Bachelor of Science in Economics will be registered in the College of Arts and Sciences during their freshman and sophomore years. They will then be transferred to the College of Commerce, provided they meet the requirements of that college. (For further information see the *Announcements* of the College of Commerce.)

(B). Pre-Education Curriculum

Candidates for the degree of Bachelor of Science in Secondary Education and Bachelor of Science in Elementary Education are registered in the College of Arts and Sciences until they have completed 58 hours or more of academic work in the lower division of the College; with a grade-point average of 2.0. They then transfer to the College of Education. During the Pre-Education period students are advised to complete as many as possible of the general courses required by the College of Education and for State certification, as shown in the bulletin *Teacher Training Programs—Requirements for Certification,* and/or the *Announcements* of the College of Education.

These publications are available at the office of the Registrar.

In addition to the above general academic requirements, students preparing to teach in high school are advised to complete as many as possible of the required academic courses in two teaching fields. Those preparing to teach in the elementary school will follow directions applicable to that field.

Upon the successful completion of the entire 64 hours of work in the lower division, Pre-Education students are eligible for the Junior Certificate of the College of Arts and Sciences.

Teaching Certificates

The Dean of the College of Education is authorized by the Board of Governors to recommend all applicants for teaching certificates.

High-school teaching certificates may be obtained by students registered in the College of Arts and Sciences as well as in the College of Education, provided they meet the requirements for certification. To qualify for the elementary-school teaching certificate, the student will transfer to the College of Education at the beginning of the junior year.

For specific requirements in regard to certification see the bulletin *Teacher Training Programs—Requirements for Certification* and/or the *Announcements* of the College of Education. These publications are available at the Registrar's Office.

Candidates for the A.B. degree who wish to qualify for teaching certificates should indicate this fact to their adviser and plan their entire course with this in view. Unless this is done by the end of the freshman year, students may encounter difficulties in qualifying for the certificate by the time they receive their degree. As a check, consultation should be had each semester with Beatrice Law, R. B. Burrows, Mary Buswell, R. B. Clarkson, C. W. Kinnaird, or J. R. Hankins, advisers of Pre-Education candidates for high-school teaching certificates; or with Frank Herrera, L. M. Davis, Sam Boyd, Barbara Drainer, or Willis Hertig, advisers of Pre-Education candidates for elementary-school teaching certificates.

(C). Pre-Journalism Curriculum

Candidates for the degree of Bachelor of Science in Journalism are registered in the College of Arts and Sciences until they have earned at least 58 semester hours of college credit. During the freshman and sophomore years they should consult the Pre-Journalism counselor and should complete all or most courses specified for pre-journalism majors.

A cumulative, better than "C" average (2.25), is required for admission to the professional school. If the student's average grade in English 1 and 2 is less than "B," he should register for English 13 during his sophomore year. Before or soon after entering the University a student planning to become a journalism major should learn the touch system of typing.

FIRST YEAR				SECOND YEAR			
First Sem.	*Hr.*	*Second Sem.*	*Hr.*	*First Sem.*	*Hr.*	*Second Sem.*	*Hr.*
English 1	3	English 2	3	Journ. 18	3	Journ. 19	3
Hist. 1 or Humanities 1	3-4	Hist. 2 or Humanities 2	3-4	Hist. 52	3	Hist. 53	3
Natural Science	4	Natural Science	4	Foreign Language (if needed)*	3	Foreign Laugnage (if needed)*	3
Foreign Language*	3	Foreign Language*	3	English 6	3	English 4 or 164	3
Journ. 1	2	Journ. 2	1	Econ. 1	3	Econ. 2	3
Phys. Ed.	1	Phys. Ed.	1	Mil. or Air Sci. 3	2	Mil. or Air Sci. 4	2
Mil. or Air Sci. 1	2	Mil. or Air Sci. 2	2	Phys. Ed. (W)	1	Phys. Ed. (W)	1
Electives	0-1			Electives as needed	--	Electives as needed	—
Max. Hr.	18		18		18		18

*Optional for advertising majors.

(D). Pre-Nursing Curriculum

The pre-professional nursing curriculum is offered by the Department of Nursing Education to students interested in professional nursing as a career, and who plan to enter a collegiate school of nursing. The Pre-Nursing Curriculum is designed to provide two years of general college work consisting of subjects required in most of the accredited collegiate schools and to stimulate and guide students in selection of courses in the physical and social sciences, in education and in the humanities as a basis for the basic professional nursing programs leading to the baccalaureate degree. Students are advised to select, as early as possible, the school of nursing they plan to enter, so that any specific requirements can be included in the required and elective hours provided. Experience has shown that students who fail to attain a minimum average of "C" may find it difficult to obtain admission to the school of nursing of their choice, or to any other collegiate school or hospital school of nursing.

Successful completion of this pre-nursing curriculum does not automatically guarantee acceptance as a candidate for admission to a school of nursing. Application for admission to a professional school must be made personally by the student.

The recommended Pre-Nursing Curriculum is:

FIRST YEAR				SECOND YEAR			
First Sem.	*Hr.*	*Second Sem.*	*Hr.*	*First Sem.*	*Hr.*	*Second Sem.*	*Hr.*
English 1	3	English 2	3	English (Lit.)	3	English (Lit.)	3
Chem. 1	4	Chem. 2	4	Sociol. 1	3	Sociol. 210	3
Zool. 1 or Biol. 1	4	Zool. 2 or Biol. 2	4	Psych. 3	4	Psych. 122 or 125	3
*Elective	3	Elective	4-5	or Psych. 1	3	Educ. 105 or 106	3
Phys. Ed.	1	Phys. Ed.	1	Health Ed.	2	Elective	4
				Elective	3-5	Phys. Ed.	1
				Phys. Ed.	1		—
	15		16-17		16-18		17

*Electives include subjects required by collegiate schools of nursing, such as speech, nutrition, bacteriology, history, and foreign language.

(E). Curriculum in Pre-Medical Technology

The following curriculum is designed to satisfy the course requirements for admission to the specialized and technical portion of the curriculum in Medical Technology offered by the School of Medicine.

Students are not transferred automatically from the pre-professional course (first two years) to the professional course (third and fourth years). Preference is given to residents of West Virginia. Application for admission to the third year should be made on forms obtainable from the Office of the Assistant Registrar, Medical Center. When completed, the forms are to be returned to his office.

Applications should be filed in February of the second year.

FIRST YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
Chem. 1	4	Chem. 2	4
Zool. 1	4	Zool. 2	4
English 1	3	English 2	3
Math. (Algebra)	3	Mil. or Air Sci. 2 (M)	2
Mil. or Air Sci. 1 (M)	2	Phys. Ed.	1
Phys. Ed.	1	Nonscience Electives (W)	2-4
Nonscience Electives (W)	2-3		
Maximum hours allowed	18	Maximum hours allowed	18

SECOND YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
Chem. 131	4	Chem. 6 or 106	4
English 3 or 5	3	English 4 or 6	3
Physics 1	4	Physics 2	4
Phys. Ed. (W)	1	Phys. Ed. (W)	1
Mil. or Air Sci. 3 (M)	2	Mil. or Air Sci. 4 (M)	2
Nonscience electives	2-4	Nonscience electives	2-4
Maximum hours allowed	18	Maximum hours allowed	18

(F). Pre-Pharmacy Curriculum

The professional curriculum of the School of Pharmacy is based on two years of pre-pharmacy requirements. The pre-pharmacy course requirements are as follows:

Algebra	3 hr.	Chemistry, General	8 hr.
Trigonometry	3 hr.	Biology, General	6-8 hr.
English Composition	6 hr.	Chemistry, Quantitative	3 hr.
Principles of Economics	3 hr.	Physics	8 hr.
Public Speaking	3 hr.	Electives to make 60 hours.	

The 60-hour requirement is exclusive of Military Science or Air Science, or Physical Education. In selecting electives, emphasis should be placed on the humanities and social sciences. A "C" average is considered the minimum standard for admission.

For admission to the School of Pharmacy the student should make formal application to the Admissions Committee of the School. Complete information may be obtained from the Dean of the School of Pharmacy or from the Office of the Assistant Registrar, Medical Center.

(G). Rehabilitation Counselor Training

The College of Arts and Sciences, through its Departments of Psychology and Social Work, in participation with the Guidance Division of the College of Education, cooperates in the curriculum of the Interdepartmental Training Program in Reha-

bilitation Counseling in the Graduate School. The deans of the above colleges, the above Department Chairmen, and the Program Coordinator constitute the Administrative and Policy Committee responsible for the curriculum.

Graduates of this program are prepared to enter private and public agencies and facilities providing services to handicapped persons.

COURSES OF INSTRUCTION AND CURRICULA

INTEGRATED STUDIES

Professor Crocker (Chairman); Instructor Hoke; Graduate Assistants Boner and Glenn, and Interdepartmental Staff.

Integrated Studies covers four main areas of knowledge and certain basic skills. In the four principal fields of knowledge, courses cut across departmental lines as follows: (1) Humanities: history, Romance languages, English language and literature, speech, Germanic languages and literature, art, philosophy, and music; (2) Social Studies: political science, psychology, economics and business administration, sociology, and social work; (3) Biological Sciences: zoology, botany, biology, and psychology; (4) Physical Sciences: geology, geography, chemistry, physics, mathematics, and astronomy. In the basic skills, courses are offered in Communication: writing, speaking, reading, and listening.

In the lower division, the four introductory general courses provide a general knowledge of subjects not covered by the student's field of major interest and a perspective for later concentration in certain fields. These courses, are, in addition, recommended for the student who has not chosen a field of specialization. The student will have through these introductions to the main bodies of knowledge an opportunity to discover his real interests and aptitudes for more advanced study. The communication courses develop proficiency in the skills of writing, reading, speaking, and listening, and thus contribute to successful work during college and after graduation. Available to all students in the University are laboratory and clinical facilities for corrective work in speech, reading, writing, and listening.

In the upper division, courses are offered that continue at an advanced level the study of important ideas and concepts in the various fields of learning. A deliberate attempt is made to secure in these courses an integrated understanding of a particular subject and its important connections with related fields. These courses frequently consider problems not encountered in sharply defined departmental or specialized courses, and they provide the student with important cross-connections between established disciplines.

Courses of Instruction

I. THE HUMANITIES

1, 2. Introductory General Course. I, II. 4 hr. per sem. This course is designed to bring to the student's attention cross sections of his civilization at those points where its development has been most significant. In accordance with this aim a substantial part of the course is its background of history, to which are added a survey of world literature, enough philosophy to acquaint the student with the main currents of Western thought; and the principal developments in art and architecture, and some music. A constant attempt is made in in the lectures and discussions to relate the past to the present, and to show the continuity of what we call Western Civilization.

The assigned readings are an important feature of the course, in that they supply much of the factual material. Lectures are primarily for the purpose of orientation—to help the student interpret the reading. Lectures on art, architecture, and music are illustrated. Weekly discussion periods are also an important part of the course. In them, students meet in small groups with an instructor, and an effort is made to help them understand the relations of

the past to present-day problems. Through the aid of a syllabus, the course is shown in perspective in order that it may be better conceived as a whole.
Mr. Manning and Staff

141. Great Books. (First Course). I. 3 hr. Five literary masterpieces in translation are considered in this course: Plato's *Republic,* Sophocles' *Oedipus Rex* and *Antigone,* Dante's *Divine Comedy,* Cervantes' *Don Quixote,* and Goethe's *Faust.* Taken separately and in order they represent the Greek world, the Middle Ages, the Renaissance and the Modern period. Taken as a group they illustrate the persistent conflict between the actual and the ideal in the literature of Western Civilization. Mr. Stasny

142. Great Books. (*Second Course*). II. 3 hr. Five literary masterpieces, of which four are in translation, are considered in this course: Marcus Aurelius' *Meditations,* Benvenuto Cellini's *Memoirs,* Montaigne's *Essays,* Rousseau's *Confessions,* and *The Education of Henry Adams.* These evaluations of the problems of life, ranging from the Roman Empire to modern America, constitute the integrating principle of the course. Mr. Stasny

181, 182. American Civilization. I, II. 3 hr. per sem. This course is designed to acquaint the student with the salient characteristics of American Civilization as they have developed since the planting of European colonies on this continent. Emphasis is placed on the unique contributions of successive arrivals on American shores to the making of a distinctive American culture, as evidenced in its folkways, arts, and philosophy. The central theme of the course is the manifestation of the democratic spirit in the thought and feelings of the American people. The course is open to all upper-division students.
Mr. Davis

250. University Summer Tour of Europe. Summer 1962. 6 hr. PR: Some cultural background in European civilization such as Humanities 1 and 2, Hist. 1 and 2, or equiv. Mr. Kinnaird

270. Cradle of History Tour of the Near East. Summer 1962. 6 hr. PR: Hist. 1 and 2 or Humanities 1 and 2, or equiv. Mr. Singer

II. THE SOCIAL SCIENCES

1, 2. Introductory General Course. I, II. 4 hr. per sem. The general course in social science aids the student in his preparation for citizenship by advancing his understanding of the social order. Major attention is given to an analysis of economic, political, and other social conditions now existing in the United States. A brief analysis of the place of this country in world affairs is included. The course is organized on the basis of two lectures and two discussion periods each week. Mr. Gibbard and Staff

III. THE BIOLOGICAL SCIENCES

1, 2. Introductory General Course. I, II. 4 hr. per sem. Primarily for the student who is not a major in biology, the Introductory General Course deals with the basic values of biology in relation to civilization and modern culture. The course considers the organization and functions of living organisms in general, as well as the relations between these organisms and the connection with their physical environment, but emphasis throughout is placed on the importance of the human being and his relationships with other organisms.

Individual student participation is encouraged in discussion periods and in the laboratory where subject matter may require some group work with equipment and specimens. Lectures are amplified by moving pictures and by demonstrations. (*This course is identical with Biology* 1 *and* 2, *General Biology*).
Staff

207. History of Biology. I. 3 hr. PR: 1 yr. of biology or equiv. This course deals with the landmarks in the history of the development of biological knowledge. Relatively intensive studies are made of the biographies of outstanding biologists as examples of their periods. Mr. Core

208. Great Texts in Biology. II. 1 hr. PR: Biol. 2 or equiv. A study of some of the great classics in biology, such as Theophrastus' *Enquiry into Plants,* Vesalius' *Epitome,* Harvey's *Motion of the Heart and Blood,* Darwin's *Origin of Species,* and Mendel's *Experiments on Hybrid Plants.* The course is designed to acquaint the student with the historical and philosophical background of modern biology and to show how the utilization of the scientific method has resulted in the great biological discoveries. Mr. Core

IV. THE PHYSICAL SCIENCES

1, 2. Introductory General Course. I, II. 4 hr. per sem. The Introductory Course in Physical Science is intended to acquaint the student with the physical world in which he lives. The course has two main objectives: to serve as an orientation course for those students who have not chosen their major field of interest, and to present a broad general view of the physical sciences to students whose interests lie in other fields.

Two periods each week are devoted to formal lectures and desk demonstrations; one period a week is used for discussion and quiz in small groups; and one period a week is devoted to laboratory demonstrations, museum displays, and field trips. The course is designed to give a general view of the whole field of the physical sciences.

Students who have successfully completed eight hours of a laboratory science in one of the physical science fields (physics, chemistry, geology) can not take Physical Science 1 and 2 for credit. Mr. Hickman and Staff

200. Workshop in Physical Sciences. I. 2 hr. PR: 12 hr. of course work in physical sciences. Designed for secondary school teachers of science. Graduate credit limited to teachers and prospective teachers. Staff

201. Physical Science for High School Teachers. I, S. 3 hr. Physical Science Teachers. The course includes: lecture demonstration and laboratory techniques, a study of demonstration and laboratory equipment suitable for high schools, and a review of modern developments in the physical sciences. Mr. Hickman and Staff

202. Physical Science for High School Teachers. II, S. 3 hr. PR: Phys. Sci. 201 or equivalent. An extension of Phys. Sci. 201 to additional topics of interest to the high school teacher, such as applied organic chemistry and radio. This is the terminal course in integrated physical science for high school teachers. (This course is reserved in 1962 for members of the National Science Foundation Summer Institute). Mr. Hickman and Staff

V. COMMUNICATION

English 0. (Communication). Corrective Course. I, II. 3 hr. For students deficient in the communication skills, as determined by achievement on entrance tests in writing and speaking. Remedial work in laboratory classes. Must be followed by English 1 (Communication) and English 2 (Communication). Staff

English 1 (Communication). Basic Course in Composition and Rhetoric. I, II. 3 hr. Practice in writing, reading, speaking, and listening to expository discourse. Classes organized to emphasize one of the skills according to the needs of the students. Special sections are provided for students with no marked deficiencies in any of the communication skills, as determined by achievement on entrance tests and in performance tests in writing and speaking. Staff

English 2 (Communication). Basic Course in Composition and Rhetoric. I, II. 3 hr. PR: English 1 (Communication). Continuation of English 1 (Communication). Practice in critical and argumentative discourse. Consideration of the function of language, abuses of logic, and mass communications. Advanced sections are provided. Staff

Courses primarily for sophomores:

ENGLISH 21 (Communication). THE USE OF LANGUAGE. I, II. 3 hr. PR: English 1 and 2 or English 1 (Communication) and 2 (Communication). Practice in the communication skills based upon materials covered by the four general areas of knowledge which constitute the program of Integrated Studies. Staff

ART

Professors CLARKSON and PATTON; Assistant Professor DRAINER; Instructors AULL, FREEDMAN, AND MOSS.

The Department of Art offers technical courses in drawing, painting, and design; a nontechnical course in appreciation; courses in Art Education; and lecture courses in the history of the arts. Effort is made to provide the needs of those interested in the cultural aspects of the arts, to meet the requirements of students planning further work of a technical nature, and to enable students in Education to meet requirements for certification as art teachers.

The following program is recommended for art majors:

FIRST YEAR				SECOND YEAR			
First Sem.	*Hr.*	*Second Sem.*	*Hr.*	*First Sem.*	*Hr.*	*Second Sem.*	*Hr.*
English 1	3	English 2	3	Foreign language	3	Foreign language	3
Foreign language	3	Foreign language	3	Art 121	3	Art 122	3
Laboratory sci.	4	Laboratory sci.	4	Elect. Group 1	3-4	Elect. Group 1	3-4
Art 11	3	Art 12	3	Elect. Group 2	3-4	Elect. Group 2	3-4
Mil. or Air Sci.	1 2	Art 30	2	Mil. or Air Sci.	3 2	Mil. or Air Sci.	4 2
Phys. Ed.	1	Mil. or Air Sci.	2 2	Phys. Ed.	1	Phys. Ed.	1
		Phys. Ed.	1				
Elective to make	18	Elective to make	18	Elective to make	17-18	Elective to make	17-18

THIRD YEAR				FOURTH YEAR			
Art 113	3	*Second Sem.*	*Hr.*	*First Sem.*	*Hr.*	*Second Sem.*	*Hr.*
Art 105	3	Art. 114	3	Art elective	3	Art elective	3
English 18 or 21	3	Art 106	3	Minor sequence (upper div.)	4-6	Minor sequence (upper div.)	4-6
Upper Division elect. Group 3	3	Upper Division elect. Group 3	3				
Elective	6	Upper Division elect. Group 5	3-4				
		Elective	4				
	18		16-18	Elective to make	18	Elective to make	18

COURSES OF INSTRUCTION

1. CREATIVE EXPRESSION IN FINE ARTS. I, II, S. 2 hr. Primarily for Elementary Education majors. An exploratory course designed to familiarize the student with the possibilities of creative expression through graphic media; to acquaint the student with the advantages and limitations of the various media; and to investigate the adaptability of these to use at various grade levels. Miss Drainer and Staff

2. CREATIVE EXPRESSION IN THE APPLIED ARTS. I, II, S. 2 hr. A course similar to Art 1 but employing materials such as clay, plasteline, paper, felt, gasso, plaster, and the like, as a means of creative expression. Miss Drainer and Staff

11 or 111, 12 or 112. DRAWING. I, II. 3 hr. per sem. Freehand drawing in pencil and charcoal. Staff

30. Appreciation of the Fine Arts. I or II. 2 hr. A study of outstanding works of art from times past as well as from the present day. Topics treated include: the materials with which the artist works; sources of the art impulse; and the relation of art to the civilization producing it. Mr. Clarkson and Staff

105, 106. Survey of Art. I, II. 3 hr. per sem. History of art from prehistoric times to the present. Mr. Patton

113, 114. Painting. I, II. 3 hr. PR: Art 11, 12. Beginning watercolor and oil. Staff

115. Scientific Drawing. I, II. 3 hr. Freehand drawing primarily for premedical and predental students. Staff

117, 118. Painting. I, II. 3 hr. PR: Art 113, 114. Second semester watercolor and oil. Messrs. Patton, Clarkson, Freedman, and Moss

121, 122. Fundamentals of Design. I, II. 3 hr. per sem. Mr. Clarkson

123. Lettering. I or II. 2 hr. Principles of design involved in lettering and their application. Mr. Patton

126. Modeling. I, II. 2 hr. PR: Consent. Introductory course in sculpture. Mrs. Aull

127. Crafts. I or II. 2 hr. Crafts in their relation to the art program in the secondary school and to recreation programs. Staff

130. Appreciation of the Arts. I or II. 3 hr. Increasing the student's understanding and enjoyment of the arts; analytical study of selected examples of painting, sculpture, and architecture together with sufficient illustrations from music and poetry to make clear the basic unity of the arts. Mr. Patton

151, 152. Special Problems. I, II. 1-3 hr. per sem. Staff

211. Figure Drawing. I, II, S. 3 hr. PR: Art 11 or 111, 12 or 112, and/or consent. Study of the construction of the figure. Drawing from the draped and partially draped model. Mr. Freedman and Staff

213. Painting. I, S. 3 hr. PR: Art 113, 117, and consent. First semester advanced watercolor. Messrs. Clarkson, Freedman, and Moss

214. Painting. I, II, S. 3 hr. PR: Art 213 and consent. Second semester advanced watercolor. Messrs. Clarkson, Freedman, and Moss

216. Painting. II, S. 3 hr. PR: Art 114, 118, and consent. First semester advanced oil painting. Messrs. Clarkson, Freedman, and Moss

217. Painting. I, II, S. 3 hr. PR: Art 216 and consent. Second semester advanced oil painting. Messrs. Clarkson, Freedman, and Moss

220. Art and the Schools. I, II, S. 2 hr. PR: 4 hr. of art, including a minimum of 2 hr. studio. Miss Drainer

221. Administration and Supervision of Art. I, II, S. 2 hr. PR: Art 220. Mainly for administrators and school principals who wish to become informed about art programs and the philosophies underlying them. Miss Drainer

225. Secondary School Art. I or II, S. 3 hr. PR: Art 11 or 111, 12 or 112, 121, 122, 113, 114, and consent. Information and working skills desirable for the teaching of art on the secondary school level. Mr. Moss and Staff

241. Medieval Architecture. I, II, S. 3 hr. PR: Art 105, 106. A study of architecture from the time of Constantine to the Renaissance. Mr. Patton

250. Renaissance Painting. I, II, S. 3 hr. PR: Art 105, 106. A study of painting in Italy from Cimebue to Tiepolo; the Renaissance in Western Europe; a brief consideration of baroque and rococo painting as outgrowth of the Renaissance. Messrs. Patton, Clarkson, and Freedman

260. Modern Painting. II, S. 3 hr. PR: Art 105, 106. Developments in painting from the French Revolution to the present day. Messrs. Patton, Clarkson, and Freedman

271. American Architecture. I, II, S. 3 hr. PR: Art 105, 106. Developments in architecture in North America from Pre-Columbian times to the present day. Emphasis will be placed on the architecture of the United States. Mr. Patton

290. Study of Original Works of Art. S. 6 hr. PR: Art 105, 106, and consent of the Department. Directed study in the museums and libraries of some urban center such as Washington or New York; a study of the architectural developments of the locality. Messrs. Clarkson, Patton, and Staff

350, 351. Special Topics. I, II, S. 1-3 hr. per sem. PR: Consent of the Department. Individual study to be determined by the student's requirements. Staff

391, 392. Thesis. I, II, S. 3 hr. per sem. PR: Approval of Student's Committee. Staff

BIOLOGY

Professors Core, Bennett, Gribble, Norman, and Taylor; Assistant Professors Baer, Clarkson, Clovis, and Tolbert; Instructors Barnett, Benson, Coover, Hertig, Johnson, Montiegel, Williams, and Withers.

Students may select biology, botany, or zoology as their major subject. Biology 1 and 2 or Botany 1 and 2 will be required of students who wish to major in botany. Either Biology 1 and 2 or Zoology 1 and 2 will be required of students who elect to major in zoology. Majors in biology should take Biology 1 and 2.

Prospective majors in biology, botany, or zoology should include in their schedule of lower-division work Chemistry 1 and 2. Prospective majors in zoology should also include Chemistry 115 in the lower-division schedule.

Courses in botany and zoology (not to exceed 10 semester hours in each) may be counted toward a major in biology, provided that the student has a minimum of 6 semester hours in upper-division courses in biology.

See page 164 for information for "Teacher Certification for Biology Majors."

CURRICULUM FOR THE A.B. DEGREE WITH A MAJOR IN BIOLOGY

FIRST YEAR				SECOND YEAR			
First Sem.	*Hr.*	*Second Sem.*	*Hr.*	*First Sem.*	*Hr.*	*Second Sem.*	*Hr.*
English 1	3	English 2	3	Chem. 1	4	Chem. 2	4
Hist. 1	3	Hist. 2	3	Social Sci. 1	4	Social Sci. 2	4
Biol. 1	4	Biol. 2	4	Foreign language	3	Foreign language	3
Foreign language	3	Foreign language	3	Educ. 105	3	Educ. 106	3
Phys. Ed. 1 (M)	1	Phys. Ed. 2 (M)	1	Music 10	2	Art 130	3
Phys. Ed. 3 (W)	1	Phys. Ed. 4-25 (W)	1	Phys. Ed. 101 (W)	1	Phys. Ed. 102 (W)	1
Mil. or Air Sci 1	2	Mil. or Air Sci. 2	2	Mil. or Air Sci. 3	2	Mil. or Air Sci. 4 (M)	2
Women—14 Men—16		Women—14 Men—16		Women—17 Men—18		Women—18 Men—19	

THIRD YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
Physics 1	4	Physics 2	4
English 3, 4, 5, or 6	3	Math. 4	3
Chem. 106	4	Bacteriol. 141	4
Math. 3	3	Zool. 171	4
English 18	3	Health Ed. 101	2
Educ. 109	2		
	19		17

FOURTH YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
Biol. 221	3	Educ. 124	6
Chem. 233	4	Educ. 150	2
Botany elective	4	Educ. 120	4
Zool. 251	4	Bot. 104	4
Biology elective	3-5	Chem. 238	4
	18-20		20

CURRICULUM FOR THE A.B. DEGREE WITH A MAJOR IN BOTANY

FIRST YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
Bot. 1 or Biol. 1	4	Bot. 2 or Biol. 2	4
English 1	3	English 2	3
Foreign language	3	Foreign language	3
Group 3 elective	3	Group 3 elective	3
Phys. Ed.	1	Phys. Ed.	1
Mil. or Air Sci. 1	2	Mil. or Air Sci. 2	2
Elective	2	Elective 2	2
	16-18		16-18

SECOND YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
Foreign language	3	Foreign language	3
Mil. or Air Sci. 3	2	Mil. or Air Sci. 4	2
Phys. Ed. (W)	1	Phys. Ed. (W)	1
Physics 1	4	Physics 2	4
Chem. 1	4	Chem. 2	4
Group 1 elective	3-4	Group 1 elective	3-4
	16-18		16-18

THIRD YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
Group 2 elective (lower div.)	3	Group 2 elective	3
Group 4 elective (lower div.)	3	Chem. 115	3
Group 5 elective (upper div.)	3	Genetics 221	3
Botany (or elect.) (upper div.)	7-9	Botany (or elect.) (upper div.)	7-9
	16-18		16-18

FOURTH YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
Chem. 233	4	Chem. 238	4
Botany (or elect.) (upper div.)	12-14	Botany (or elect.) (upper div.)	12-14
	16-18		16-18

CURRICULUM FOR THE A.B. DEGREE WITH A MAJOR IN ZOOLOGY

FIRST YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
Zool. 1 or Biol 1	4	Zool. 2 or Biol. 2	4
English 1	3	English 2	3
Chem. 1	4	Chem. 2	4
Math. 3	3	Math. 4	3
Phys. Ed.	1	Phys. Ed.	1
Mil. or Air Sci. 1	2	Mil. or Air Sci. 2	2
	17		17

SECOND YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
Art 115	3	Chem. 115	3
Physics 1	4	Physics 2	4
Foreign language	3	Foreign language	3
Mil. or Air Sci. 3	2	Mil. or Air Sci. 4	2
Phys. Ed. (W)	1	Phys. Ed. (W)	1
Group 1 elect.	3-4	Group 1 elect.	3-4
Electives	2-4	Electives	2-4
	18		18

THIRD YEAR				FOURTH YEAR			
First Sem.	*Hr.*	*Second Sem.*	*Hr.*	*First Sem.*	*Hr.*	*Second Sem.*	*Hr.*
Group 2 elective	3	Group 2 elective	3	Chem. 163	4	Zool. 232	5
Chem. 233	4	Foreign language	3	Zool. 231	5	Zool. 274	4
Foreign language	3	Botany	4	Electives (upper division)	4	Electives (upper division)	7-9
Botany	4	Chem. 238	4	Zool. 273	4		
Zool. 251	4	Electives (upper division)	3-5				
	18		18		18		18

Candidates for the A.B. degree in Zoology must complete the following minimum number of credit hours in the subjects listed in addition to the University and College of Arts and Sciences general requirements: Mathematics, 6 hr. (must include Math. 3 and 4); Chemistry, 23 hr. (must include Chem. 1, 2, 115, 163, 233, 238); Physics, 8 hr.; Art 115; Biological Sciences, 38 hr. (must include Zool. 1 and 2 [Biol. 1 and 2 may be substituted], Zool. 231, 232, 251, 273, and 274, and 8 hr. of botany). A total of 128 semester hours is necessary for this degree, of which 124 hours are in subjects exclusive of required Military Science or Air Science, required Physical Education, and English 0. A minimum of 38 upper-division hours is also necessary.

TEACHER CERTIFICATION FOR BIOLOGY MAJORS

A student may meet the requirements for the A.B. degree with a major in Biology and at the same time qualify for teacher certification. The curriculum suggested on page 162 is designed to include the requirements of the basic subjects prescribed for the first two years for prospective teachers. During the junior and senior years the courses required in the major and minor subjects will largely coincide with those required for first and second teaching fields for high school teachers. At the same time they will complete the required work in Education in the teacher-training program.

Biological Station

Summer field courses in biology will hereafter be offered at Terra Alta Biological Station, Terra Alta, W. Va., which opens for its first session during the summer of 1962. This Station is advantageously located with respect to diversified plant and animal habitats of the mid-Appalachian region and is only about 35 miles from the main campus.

Courses of Instruction

BIOLOGY

Lower Division

1, 2. General Biology. I, II. 4 hr. per sem. General introductory course in Biology. Staff

51. Microbiology. I. 3 hr. An introduction to the study of microorganisms. Primarily for pre-nursing students and pre-medical secretaries. Mr. Bennett

Upper Division

191. Honors Course. II. 3 hr. PR: Second sem. of junior year, recommendation of adviser. For departmental majors only. Supervised reading and investigation. Staff

192. Honors Course. I. 3 hr. PR: Biol. 191. Supervised reading and investigation. Staff

193. Honors Course. II. 3 hr. PR: Biol. 192. A thesis embodying the results of the work done in Biol. 191 and 192. Staff

203. Natural History. S. 3 hr. PR: General biology or equiv. Lectures, demonstrations, and field trips designed to provide a brief survey of certain aspects of general biology suitable for elementary and high schools. Mr. Benson

204. Biology Workshop. S. 3 hr. PR: Biol. 2 or equiv. Primarily for high school teachers of biology. Lectures, discussions, and trips to various campus facilities are designed to meet the needs of the students enrolled. (Not open to majors in biology or to students having credit for Biol. 201 or 202). Mr. Tolbert

205. Principles of Evolution. I, S. 3 hr. PR: Biol. 2, Bot. 2, or Zool. 2. An introduction to the study of evolution. Mr. Bennett

206. Modern Concepts in Biology. I, S. 2 hr. PR: Biol. 2 or equiv. A course designed to acquaint the advanced student or teacher with the latest methods and knowledge in the field of biology. Mr. Clovis

207. History of Biology. I. 3 hr. PR: Biol. 2. History of the development of biological knowledge, with philosophical and social backgrounds. Offered in 1963-64 and alternate years. Mr. Core

208. Great Texts of Biology. II. 1 hr. PR: Biol. 2 or equiv. A study of some of the great classics in biology, such as Theophrastus' *Enquiry Into Plants,* Vesalius' *Epitome,* Harvey's *Motion of the Heart and Blood,* Darwin's *Origin of Species,* and Mendel's *Experiments on Hybrid Plants.* Mr. Core

209. The Literature of Biology. I. 1 hr. PR: Biol. 2 or equiv. A consideration of the sources and forms of the literature, the development of bibliographies, and the preparation of scientific papers. Mr. Core

210. Biological Science for High School Teachers. II. 2 hr.; S., 3 hr. PR: Biol. 2 or equiv. A study of biological demonstrations and experiments suitable for high school biology. Mr. Clovis

211. Microtechnique. I. 3 hr. PR: Biol. 2, Bot. 2, or Zool. 2, or equiv. Theory and practice of making microscope preparations. Mr. Clovis

212. Biological Preparations. S. 3 hr. PR: Biol. 1. Methods for the preparation of microscope slides and other demonstration materials for high school biology classes. Emphasis will be on procedure using equipment and reagents commonly available to the teacher. Mr. Clovis

215. Cytology. II. 4 hr. PR: Biol. 2. Cells, their structure and functions. Mr. Bennett

221. General Ecology. I. 4 hr. Study of plants and animals in relation to their environments, with special emphasis on facts and principles involving populations, communities, and ecosystems. Offered in 1963-64 and alternate years. Mr. Taylor

Graduate Division

301, 302. Seminar. I, II. 1 hr. per sem. Topics of interest to all biologists are considered. All members of the staff and graduate students contribute by the presentation of a report on some scientific activity. Required of all graduate students. Staff members and students in other departments are invited to attend. Staff

311. Advanced Microtechnique. II. 1-3 hr. PR: Consent. Mr. Clovis

321, 322. Seminar in Ecology. I, II. 2 hr. per sem. PR: Bot. 221 or Zool. 221 and consent. Selected topics on relations of organisms to environment and on communities of organisms. Staff

376, 377. Seminar in Physiology. I, II. 2 hr. per sem. PR: Biol. 274, Bot. 273, Zool. 271, or Plant Path. 330, and consent. Selected topics on functions common to all organisms. Staff

BOTANY

Lower Division

1, 2. General Botany. I, II. 4 hr. per sem. Introductory course in botany. Mr. Tolbert

61. Systematic Botany. I. 2 hr. Identification of vascular plants. Primarily for students in Forestry. Mr. Clovis

67, 68. Dendrology. I, II. 3 hr. per sem. PR: Biol. 2. Classification and distribution of the timber trees of the United States. Primarily for students in Forestry. Mr. Core and Staff

Upper Division

104. The Plant Kingdom. II. 4 hr. A survey of the plant kingdom. Mr. Tolbert

161. Systematic Botany. II. 4 hr. The identification and classification of vascular plants. Mr. Clovis

171. Plant Physiology. II. 2 hr. Physico-chemical processes of plants. Primarily for students in Forestry. Mr. Baer

191. Honors Course. II. 3 hr. PR: Second sem. of junior year and recommendation by adviser. For departmental majors only. Supervised reading and investigation. Staff

192. Honors Course. I. 3 hr. PR: Bot. 191. Supervised reading and investigation. Staff

193. Honors Course. II. 3 hr. PR: Bot. 192. A thesis embodying the results of the work done in Bot. 191 and 192. Staff

218. Economic Botany. II. 3 hr. PR: Biol. 2 or Bot. 2. Plants from the standpoint of their value to man. Mr. Clarkson

221. Plant Ecology. I. 4 hr. PR: Biol. 2 or Bot. 2. Environmental relationships of plants. Mr. Baer

224. Plant Communities. S. 3 hr. PR: Biol. 2 or equiv. Field studies in ecology. Mr. Bennett

227. Geographic Botany. I, S. 2 or 3 hr. PR: Bot. 2 or Biol. 2 Study of plant groupings and world-wide distribution of plants. Offered in 1962-63 and alternate years. Mr. Core

231. Plant Morphology. I. 4 hr. PR: Biol. or Bot. 2. Development and structure of algae and fungi. Offered in 1963-64 and alternate years. Mr. Bennett

232. Plant Morphology. II. 4 hr. PR: Biol. 2 or Bot. 2. Development and structure of bryophytes and vascular plants. Offered in 1963-64 and alternate years. Mr. Bennett

235. Plant Anatomy. I. 4 hr. PR: Bot. 2 or equiv. Anatomy of seed plants. Mr. Tolbert

250. Fresh Water Algae. I. 4 hr. PR: Bot. 1, 2, or Biol. 1, 2. Taxonomy, cytology, and ecology of aquatic, aerial, and land forms of fresh-water algae. Offered in 1962-63 and alternate years. Mr. Bennett

255. Bryophytes. II. 2 hr. PR: Bot. 2 or Biol. 2. Identification of liverworts and mosses. Offered in 1962-63 and alternate years. Mr. Clovis

256. Vascular Cryptogams. II. 4 hr. PR: Bot. 1, 2 or Biol. 1, 2. Taxonomy, anatomy, cytology, and ecology of the club mosses, horsetails, and ferns. Offered in 1962-63 and alternate years. Mr. Bennett

261. Advanced Systematic Botany. I. 3 hr. PR: Bot. 161 or equiv. Taxonomy of pteridophytes, gymnosperms, and monocotyledons. Mr. Clovis

262. Advanced Systematic Botany. II. 3 hr. PR: Bot. 161 or equiv. Taxonomy of dicotyledons. Mr. Clovis

263. Taxonomy of Vascular Plants. S. 3 hr. Field studies in the taxonomy of higher plants. Mr. Bennett

265. Aquatic Seed Plants. I. 3 hr. PR: Biol. 2 or equiv. Classification, ecology, and economic importance of aquatic seed plants. Offered in 1963-64 and alternate years. Mr. Bennett

266. Flora of West Virginia. II, S. 3 hr. PR: Biol. 2 or equiv. A consideration of the native plant life of the State. Mr. Core

273. Plant Physiology. I. 4 hr. PR: Biol. 2 or Bot. 2, and Chem. 1 and 2, or equiv. Physico-chemical processes of plants. Mr. Baer

296, 297. Special Topics. I, II. 1-4 hr. per sem. PR: Consent. Critical studies of topics to be assigned by the instructor. Staff

Graduate Division

316. Cytotaxonomy. I. 3 hr. PR: Bot. 2 or Biol. 2 and consent. The determination of phylogenetic relationships by cytological and taxonomic methods. Offered in 1963-64 and alternate years. Mr. Bennett

325. Experimental Ecology. II. 2-4 hr. PR: Biol. 1, Bot. 161, and Bot. 221 or equiv. Experiments on environmental relations of plants. Mr. Baer

331. Plant Embryology. I. 2 hr. PR: Biol. 2 or Bot. 2 and consent. Gametogenesis, syngamy, and embryo development in vascular plants. Offered in 1962-63 and alternate years. Mr. Bennett

351, 352. Problems in Plant Taxonomy. I, II. 1-6 hr. PR: Bot. 261, 262, or equiv. Staff

368. Agrostology. II. 2 hr. PR: Bot. 161 or equiv. Taxonomy of grasses. Offered in 1963-64 and alternate years. Mr. Clovis

374. Advanced Plant Physiology. II. 2-3 hr. PR: Bot. 273 or equiv., also courses in general physics and organic chemistry. Advanced studies of plant processes and physiological methods. Mr. Baer

391, 392, 393, 394. Research. I, II. 1-6 hr. Staff

ZOOLOGY

Lower Division

1, 2. General Zoology. I, II. 4 hr. Combines a study of the chief groups of animals in evolutionary sequence with introductions to other zoological subjects, including cytology, physiology, biochemistry, genetics, embryogeny, and ecology. Primarily for preprofessional students in medical and allied disciplines and for those whose major interests are animals. Students having credit for Biol. 1 and 2 may not receive credit for this course. Mr. Taylor and Staff

31. Human Anatomy. I. 4 hr. General anatomy for nurses. Mr. Gribble

Upper Division

171. Human Physiology. II. 4 hr. An introductory course in the functions of man. Messrs Norman, Coover and Staff

191. Honors Course. II. 3 hr. PR: Second sem. of junior year, recommendation by adviser. For departmental majors only. Supervised reading and investigation. Staff

192. Honors Course. I. 3 hr. PR: Zool. 191. Supervised reading and investigation. Staff

193. Honors Course. II. 3 hr. PR: Zool. 192. A thesis embodying the results of the work done in Zool. 191 and 192. Staff

210. Animal Behavior. I. 3 hr. Facts and principles of individual and group behavior, with consideration of the modern science of ethnology. Offered in 1962-63 and alternate years. Mr. Taylor

222. Field Studies of Invertebrates. S. 3 hr. Taxonomy and ecology of the invertebrates. Mr. Birch

223. Field Studies of Vertebrates. S. 3 hr. Taxonomy and ecology of the vertebrates. Mr. Birch

224. Limnology. I. 5 hr. PR: Zool. 2 or equiv. Physical, chemical and biological characteristics of inland waters with an introduction to principles of biological productivity. Mr. Benson

231. Comparative Anatomy. I. 5 hr. PR: Zool. 2 or equiv. Organs and systems of various vertebrates, together with other facts of interest concerning these animals. Mr. Gribble, Miss Montiegel, and Miss Williams

232. Vertebrate Embryology. II. 5 hr. PR: Zool. 2 or equiv. Introductory study of developments of vertebrates, based on frogs, fowl, and mammals. Mr. Gribble, Miss Montiegel, and Miss Williams

233. Comparative Histology. II. 3 hr. PR: Zool. 231 and consent. Limited to seniors and graduate students. A comparative study of the tissues of the vertebrates. Miss Williams

235. Comparative Developmental Anatomy. II. 3 hr. PR: Zool. 231. Anatomy and development of the organs and systems of various vertebrates. Mr. Gribble

236. Comparative Neuroanatomy. II. 3 hr. PR: Zool. 2 or equiv. Comparative study of development and anatomy of the nervous systems of vertebrates. Miss Montiegel

237. Osteology. I. 2 hr. PR: Zool. 2 or equiv. Development and anatomy of the skeleton. Miss Williams

250. Animal Systematics. I. 2 hr. PR: Zool. 2 or equiv. Principles and practices in animal taxonomy. Mr. Benson

251. Invertebrate Zoology. I. 4 hr. PR: Zool. 2 or equiv. Advanced study of animals without backbones. Mr. Birch

263. Ichthyology. II. 3 hr. PR: Zool. 2 or equiv. Ecology, life histories, taxonomy, and distribution of fishes. Offered in 1962-63 and alternate years. Mr. Benson

264. Fisheries Biology. II. 4 hr. PR: Zool. 2 or equiv. Fisheries management, emphasizing study of age and growth, population techniques, and concept of yield. Mr. Benson

265. Ornithology. II. 3 hr. PR: Zool. 1 or equiv., consent. Field and laboratory studies on identification, migration, protection, nesting, and food habits of birds. Mr. Birch

271. Vertebrate Physiology. I. 4 hr. PR: Zool. 2 or equiv. A consideration of the functions of vertebrate organs and organ systems. Offered in 1962-63 and alternate years. Staff

272. Physiology of the Endocrines. I. 4 hr. PR: General zool. or general biol., comparative anatomy, and organic chemistry. Comparative physiology and endocrine mechanisms. The relation of hormonal and parahormonal agents to chemical coordination, metabolism, growth, development, and sex. Staff

273, 274. Cellular Physiology. I, II. 4 hr. per sem. PR: Biol. 2 or Zool. 2; Chem. 238 and Physics 2. A consideration of the functions common to all forms of living matter. Mr. Norman

276. Comparative Physiology. II. 4 hr. PR: Zool. 273 or equiv. A study of the diverse ways in which different kinds of animals meet their functional requirements. Staff

Graduate Division

331. Mammalian Anatomy. S. 3 hr. PR: Zool. 231, 232, 233, 235, 236, and 237, and consent. The study of the anatomy of selected animals from the regional and sectional approach. Offered 1964 and every third year. Mr. Gribble

332. Anatomy of the Integument. I. 2 hr. PR: Zool. 231, 232, 233, 234, and 235 and consent of instructor. An advanced study of the gross, developmental, comparative and microscopic anatomy of the integument and its derivatives. Offered 1964-65 and every third year. Mr. Gribble

334. Anatomy of the Circulatory and Respiratory Systems. II. 3 hr. PR: Zool. 231, 232, 235, and consent. An advanced study of the gross, developmental and comparative anatomy of the circulatory and respiratory systems. Offered 1964-65 and every third year. Mr. Gribble

335. Anatomy of the Urogenital System. I. 3 hr. PR: Zool. 231, 232, and 235, and consent. An advanced study of the gross, developmental and comparative anatomy of the genital and urinary systems. Offered 1962-63 and every third year. Mr. Gribble

336. Advanced Comparative Neuroanatomy. II. 3 hr. PR: Zool. 231, 232, 233, and 236, and consent. An advanced study of the gross, microscopic, developmental and comparative anatomy of the nervous system. Offered 1962-63 and every third year. Mr. Gribble

337. Advanced Osteology. S. 3 hr. PR: Zool. 231 and 237, and consent. The study of the gross, miscroscopic, developmental, and comparative anatomy of the skeleton. Offered in 1962 and every third year. Mr. Gribble

338. Analogies and Homologies. I. 3 hr. PR: Zool. 231, 232, 233, 235, 236, 237, 331, 334, 336, and 337, and consent. A detailed study of the analogies and homologies as found in the vertebrates. Offered 1963-64 and every third year. Mr. Gribble

339. Anomalies and Variations. II. 3 hr. PR: Zool. 231, 232, 233, 235, 236, 237, 331, 334, 335, 336, 337, and 338, and consent. A detailed study of the types, causes, results and frequency of vertebrate anatomical and developmental anomalies and variations. Offered in 1963-64 and every third year. Mr. Gribble

351. Advanced Invertebrate Zoology. I, II. 1-4 hr. PR: Zool. 251 and consent. Mr. Birch

391, 392, 393, 394. Research. I, II. 1-6 hr. Staff

396, 397. Special Topics. I, II. 1-3 hr. per sem. Critical studies of topics to be determined according to the student's requirements. Staff

CHEMISTRY

Professors Collett, Gibson, J. L. Hall, and Lazzell; Associate Professors G. A. Hall, Hickman, Humphrey, Muth, Paul, Popovich, and Wilhelm; Assistant Professors Graybeal, MacDowell, and Winston; Instructors Alfred, Ellers, Jones, and Morrison.

Chem. 1 and Chem. 2 are prerequisite to all other courses in chemistry. Chemistry majors are required to take Chem. 5, 6, 233, 238, 260, and 261; Math. 107 and 108;[8] and a minimum of one year of physics.[9]

A deposit is required of all students who take laboratory courses in chemistry.

[8]If mathematics is elected as a minor field, students are required to take an additional 3-hour course beyond calculus. This course is usually Math. 240, Differential Equations.

BACHELOR OF ARTS IN CHEMISTRY

The Bachelor of Arts degree is recommended for those students who are interested in a scientific program which offers opportunity for a considerable number of electives in the nonscience field. This program is recommended for those students who plan to teach in secondary schools. Careful planning with their advisers is necessary for such students, in order that teacher certification requirements may be met. The requirements, listed below, total 128 credit hours, of which 124 must be in subjects exclusive of credit earned in Military or Air Science, Physical Education, and English 0. (Math. 2, completed after Sept. 1, 1962, will not be included in the 124 hours.)

FIRST YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
Chem. 1	4	Chem. 2	4
English 1	3	English 2	3
Math. 3	3	Math. 4	3
Foreign language	3	Foreign language	3
Phys. Ed. 1 or elective	1	Phys. Ed. 2 or elective	1
Mil. or Air Sci. 1 or elective	2	Mil. or Air Sci. 2 or elective	2
	16		16

SECOND YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
Chem. 5	4	Chem. 6	5
Math. 5	4	Math. 107	4
Foreign language	3	Foreign language	3
Group 2 electives	3	Group 2 electives	3
Mil. or Air Sci. 3 or elective	2	Mil. or Air Sci. 4 or elective	2
	16		17

THIRD YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
Chem. 233	5	Chem. 238	5
Math. 108	4	Physics 112	5
Group 1 elect.	3-4	Group 1 elect.	3-4
Physics 111	5	Speech 11	3
	17 or 18		16 or 17

FOURTH YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
Chem. 260	5	Chem. 261	5
Chem. elect.	2	Chem. elect.	2
Other electives	11	Other electives	11
	18		18

BACHELOR OF SCIENCE IN CHEMISTRY

The Bachelor of Science degree is designed for those students who desire to qualify for professional positions in industry and governmental services, as well as those who plan to do graduate work in chemistry. Requirements for the Bachelor of Science degree are listed on page 171. Electives must be chosen so as to satisfy the distribution of electives required for the A.B. degree. A total of 136 credit hours are required of which a minimum of 124 hours must be established in subjects exclusive of credits earned in required Physical Education, required Military Science or Air Science, and English 0. (Math. 2, completed after Sept. 1962, will not be included in the 124 hours.) Twenty-one hours of "other electives" are included in the third and fourth year schedule. Six hours of these electives must be chosen from upper-division courses (200 series) in engineering, mathematics, or sciences other than chemistry.

[9]Physics 111 and 112 count as a minor. If Physics 1 and 2 are offered, nine additional upper-division hours in physics are required to satisfy the minor.

FIRST YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
Chem. 1	4	Chem. 2	4
English 1	3	English 2	3
Foreign language	3	Math. 4	3
Math. 3	3	Foreign language	3
Phys. Ed. 1	1	Electives	2
Mil. or Air Sci. 1	2	Phys. Ed. 2	1
		Mil. or Air Sci. 2	2
	16		18

SECOND YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
Chem. 5	4	Chem. 6	5
Math. 5	4	Math. 107	4
Foreign lang.*	3	Foreign language	3
Other electives	4	Other electives	4
Mil. or Air Sci. 3	2	Mil. or Air Sci. 4	2
	18		18

THIRD YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
Chem. 233	5	Chem. 238	5
Math. 108	4	Physics 112	5
Physics 111	5	Chem. elective	2
Chem. elective	2	Other electives	4
Other electives	2		
	18		16

FOURTH YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
Chem. 260	5	Chem. 261	5
Chem. elective	4	Chem. elective	4
Other electives	8	Other electives	7
	17		16

*Six hours of a second foreign language in addition to the language requirements for the A.B. degree are necessary for graduation.

Courses of Instruction[10]

Lower Division

1. Inorganic Chemistry. I, II. 4 hr. Required of all students whose work calls for the first year of chemistry. Elective for others. Primarily for freshmen. Staff

2. Inorganic Chemistry. I, II. 4 hr. PR: Chem. 1. Required of all students whose work calls for first year of chemistry. Elective for others. Primarily for freshmen. Staff

5 or 105. Qualitative Analysis. I. 4 hr. PR: Chem. 2. Required of students whose major is chemistry, and pharmacy students. 2 lect. and 2 3-hour lab. periods. Mr. Gibson and Miss Paul

6 or 106. Quantitative Analysis. II. 4-5 hr. PR: Chem. 2. Chem. 5 should precede this course wherever possible. Required of students whose major is chemistry. 3 lect. and 2 or 3 lab. Mr. Gibson and Mr. Humphrey

15 or 115. Quantitative Analysis. I, II. 3 hr. PR: Chem. 2. For premedical, chemical engineering, and pharmacy students. 2 4-hr. lab. periods which include occasional lectures and recitations. Mr. Humphrey and Mr. Wilhelm

31 or 131. Organic Chemistry. I. 4 hr. PR: Chem. 2. For students in agriculture and home economics. 3 lect., 1 lab. Mr. Winston and Mr. Muth

63 or 163. Physical Chemistry. I. 4 hr. PR: Chem. 2. Required of premedical students and recommended for geology majors and non-chemistry majors. 3 lect., 1 lab. Mr. G. A. Hall

[10]Chemistry 1 and 2 are prerequisite to all other courses in chemistry. Three-year and four-year premedical students are referred to page 150 for outline of required courses. For courses in biochemistry and pharmaceutical chemistry see the **Announcements** of the School of Medicine, or the University **Catalog.**

Upper Division

141, 142. Assigned Topics. I, II. 1-5 hr. PR: Consent. Individual investigations under supervision of instructor. Staff

170. Glass Working for the Chemical Laboratory. II. 2 hr. PR: Chemistry major or consent. 1 lect., 1 lab. Mr. Graybeal

201. Intermediate Inorganic Chemistry. I. 3 hr. PR: Chem. 6 or 106. Designed for chemistry, engineering and science majors. 2 lect., 1 lab. Mr. Wilhelm

208. Quantitative Analysis. I. 3 hr. PR: Chem. 6 (5 hr.), Physics 2 or 112, Math. 5. Required for all graduate chemistry majors. 1 lect., 2 lab. Mr. Gibson

211. Intermediate Inorganic Lectures. S. 2 hr. PR: 12 hr. of chemistry. Selected topics of modern inorganic chemistry. Not for science majors. Staff

212. Intermediate Inorganic Laboratory. S. 2 hr. PR: Chem. 211. Laboratory technique to illustrate material covered in Chem. 211. Not for science majors. Staff

214. Qualitative Organic Analysis. I. 3 hr. PR: Chem. 238. For seniors or graduate students of chemistry and other sciences. 1 lect., 2 lab. Mr. Muth

215. Quantitative Organic Analysis. II. 3 hr. PR: Chem. 238. For seniors and graduate students of chemistry and other sciences. 1 lect., 2 lab. Mr. Muth

233. Organic Chemistry. I, II. 4-5 hr. PR: Chem. 6 or 115. Required of students who major in chemistry, premedicine, and chemical or mining engineering. 3 lect., 1 or 2 lab. Mr. Lazzell and Mr. Muth

238. Organic Chemistry. II. 4-5 hr. PR: Chem. 233. Continuation of Chemistry 233. 3 lect., 1 or 2 lab. Mr. Lazzell

243, 244. Selected Topics. I, II. 1-5 hr. PR: Consent. Individual investigations under supervision of instructor. Staff

247. Stereochemistry. I. 2 hr. PR: Chem. 238. Open to seniors. Mr. Winston

260. Physical Chemistry. I. 4-5 hr. PR: Chem. 233, Physics 2 or 112, Math. 108. Required of chemistry majors. 3 lect., 1 or 2 lab. Mr. Collett and Mr. G. A. Hall

261. Physical Chemistry. II. 4-5 hr. PR: Chem. 260. A continuation of Chem. 260. 3 lect., 1 or 2 lab. Mr. Collett and Mr. G. A. Hall

262. The Chemistry of Colloids. II. 2 hr. PR: Chem. 115 or equiv. Mr. G. A. Hall

264. Physical Chemistry. II. 4 hr. PR: 11 hr. college chemistry. For non-chemistry graduate students, particularly teachers of science in public schools. 3 lect., 1 lab. Mr. G. A. Hall

273. Chemical Literature. II. 2 hr. PR: Chem. 6, 238. Study of procedures used for search of scientific literature. Mr. Hickman

274. History of Chemistry. II. 2 hr. PR: Chem. 6 or equiv., organic chemistry. A study of the development of scientific thought in the field of chemistry. Miss Paul

275. Workshop in Chemistry, Inorganic. S. 2 hr. PR: 12 hr. of chemistry. Primarily a refresher course for high school teachers. Not for science majors. Staff

276. Workshop in Chemistry, Organic. S. 2 hr. PR: 4 hr. of organic chemistry. A refresher course primarily for high school teachers. Not for science majors. Staff

277. Chemistry of Natural Products. II. 2 hr. PR: Chem. 238 or equiv. Mr. MacDowell

278. Modern Chemical Principles. I. 2 hr. PR: Chem. 2 or equiv. For high school teachers and non-science majors. Staff

279. Modern Chemical Principles. II. 2 hr. PR: Chem. 2 or equiv. For high school teachers and non-science majors. Staff

285. Nuclear Chemistry. II. 3 hr. PR: Chem. 2, Math. 107. Fundamentals of radioactivity as applied to chemistry and discussion of tracer applications. Mr. Wilhelm

Graduate Division

301. Advanced Inorganic Chemistry. I. 3 hr. PR: Chem. 261. Required of all graduate chemistry majors. Mr. Hickman

302. Advanced Inorganic Chemistry. II. 3 hr. PR: Chem. 301. Mr. Hickman

317. Polymer Chemistry. II. 2 hr. PR: Chem. 238, 261. Mr. Winston

343. Advanced Organic Chemistry. I. 4 hr. PR: Chem 238 or equiv. Required of all graduate chemistry majors. Mr. Muth

345. Theories of Organic Chemistry.[11] II. 2 hr. PR: Chem. 343. Mr. Muth

350. Heterocyclic Chemistry.[11] II. 2 hr. PR: Chem. 343. Mr. Muth

367. Advanced Physical Chemistry. II. 2-4 hr. PR: Chem. 261. Required of all graduate chemistry majors. 2 lect., 2 lab. Mr. J. L. Hall

368. Advanced Physical Chemistry. I. 2 hr. PR: Chem. 367. Mr. J. L. Hall

369. Chemical Kinetics. II. 2 hr. PR: Chem. 261. Mr. G. A. Hall

370. Quantum Chemistry.[11] I. 3 hr. PR: Chem. 261, Math. 108, Physics 112. Discussions of the development and significance of quantum mechanics with application of chemical problems. Mr. Humphrey

380. Electrochemistry. II. 3 hr. PR: Chem. 238, 261. 1 lect., 2 lab. Mr. Collett

383. Advanced Quantitative Analysis. I or II. 3 hr. PR: Chem. 208, 238, 261. 1 lect., 2 lab. Mr. Gibson

388. Valence and Molecular Structure.[11] II. 2hr. PR: Chem. 261, Math. 108, Physics 112. Mr. Gibson

389. Chemical Thermodynamics.[12] I. 2 hr. PR: Chem. 261, Math. 108. Mr. Gibson

390. Chemical Thermodynamics.[12] II. 2 hr. Continuation of Chem. 389. Mr. Gibson

391, 392. Journal Meeting and Seminar. I, II. 1 hr. per sem. Required of students working for graduate degrees with a major in chemistry. Recommended as a minor for students from other departments. Staff

395, 396. Special Topics. I, II. 1-3 hr. per sem. Chemistry of carbohydrates, chemical microscopy, crystallography, coordination compounds, unfamiliar oxidation states, inorganic preparations, inorganic polymers, infrared, microwave, and radio-frequency spectroscopy are topics suggested for this course. Staff

397, 398, 399. Research. I, II. 1-10 hr. Six hours are required for the Master's Degree. Staff

CLASSICS

The Department of Classics offers courses in the Greek and Latin languages and in classical civilization. Courses in the department are intended not only to give students a thorough knowledge of the Greek and Latin languages and literatures but also to acquaint them with the classical culture in general.

[11]Offered in alternative years, available in 1962-63.
[12]Offered in alternate years, available in 1963-64.

Courses suggested are for Classics majors with English as a second teaching subject. Those wishing to offer a modern language as a second teaching subject may substitute the modern language for the English beginning with the sophomore year; those who wish to offer Social Studies may substitute History, etc. for the same English.

Women can qualify for a teacher's certificate and graduate with 129 hours, and men with 135 hours.

Students who do not plan to teach can substitute electives for the Education courses and graduate with 128 hours, of which 124 hours are exclusive of required Physical Education, required Military Science or Air Science, and English 0. (Math. 2, completed after Sept. 1, 1962, will not be included in the 124 hours.)

FIRST YEAR				SECOND YEAR			
First Sem.	*Hr.*	*Second Sem.*	*Hr.*	*First Sem.*	*Hr.*	*Second Sem.*	*Hr.*
English 1	3	English 2	3	Hist. 2 or 52	3	Hist. 2 or 53	3
Latin 3	3	Latin 4	3	Latin 12	3	Latin 22	3
Laboratory Sci.	4	Laboratory Sci.	4	Social Sci. 1	4	Social Sci. 2	4
Humanities 1	4	Humanities 2	4	Educ. 105	3	Educ. 106	3
Phys. Ed.	1	Phys. Ed.	1	Art Appreciation 30	2	Music Appreciation	2
Mil. or Air Sci. 1	2	Mil. or Air Sci. 2	2	Phys. Ed.	1	Phys. Ed.	1
				Mil. or Air Sci. 3	2	Mil. or Air Sci. 4	2
	16-17		16-17		16-17		16-17

THIRD YEAR				FOURTH YEAR			
First Sem.	*Hr.*	*Second Sem.*	*Hr.*	*First Sem.*	*Hr.*	*Second Sem.*	*Hr.*
English 18	3	English Lit.	3	English	6	English	6
Latin	6	Latin	6	Latin	6	Latin	3
Educ.	3	Educ.	3	Educ.	3	Educ.	6
Greek 1	3	Greek 2	3	Philosophy	3	Elective	3
Health Educ.	2	Lib. Sci. or Speech	3				
	17		18		18		18

Courses of Instruction

Lower Division

1. Elementary Latin. I. 3 hr. Elements of the Latin language. Completion of a standard beginner's book.

2. Elementary Latin. II. 3 hr. Continuation of Latin 1, consisting of study of a standard second-year book.

3. Intermediate Latin. I. 3 hr. PR: Latin 2 or 2 units of high-school Latin. Selections from Caesar, Aulus Gellius, Nepos, and from other authors of comparable ease; designed to prepare students to read orations of Cicero and other Latin of similar difficulty.

4. Cicero's Orations. II. 3 hr. PR: Latin 3, or 2 units of high-school Latin.

5. Latin for Law Students: Selections from Legal Latin and the Institutes of Justinian. II. 3 hr. PR: Latin 3 or 2 units of high-school Latin.

12. Selections from Roman Prose. I. 3 hr. PR: Latin 3 and 4 or equiv. Cato to the end of the Silver Latin Period.

21. Roman Letterwriting. I. 3 hr. PR: Latin 4 and 12, or 4 units of high-school Latin.

22. Selections from Roman Poetry. II. 3 hr. PR: Latin 4 and 12, or equiv. Selection from the elegiac, lyric, and iambic poets from Martial's epigrams.

Upper Division

101. Classical Myths in the Modern World. I. 3 hr. This course, given entirely in English and assuming no knowledge of Greek or Latin, introduces the student to classical myths of gods and legends of heroes and their influence upon the modern world of thought and science, including such fields as language, literature, music, painting, sculpture, and the theater. Illustrated with photographs, lantern slides, casts, and quotations from classical authors in English.

102. Classical Culture and the Modern World. II. 3 hr. This course, like Classics 101, is given entirely in English and introduces the student to classical life and thought through selected phases of the following topics of Greek and Roman civilization that we find vital today: daily life and customs, art, law, literature, science, and the influence of these upon present day life and thought. Illustrated with pictures, slides, casts, and quotations from classical authors in English. This course may be taken independently, but does not repeat the material covered in Classics 101, and is designed to follow it.

121. Honors Course. II. 3 hr. PR: Second semester of junior year with major in Classics; recommendation by the chairman of the department. Wide supervised reading in the Greek poets, historians, orators, and philosophers.

122. Honors Course. I. 3 hr. PR: Classics 121. Wide supervised reading in the Roman poets, historians, orators, and philosophers.

123. Honors Course. II. 3 hr. PR: Classics 122. A thesis embodying the results of the reading in Classics 121 and 122.

201. The Story and Novel. I. 3 hr. PR: Latin 12, 22, or equiv. The origin of the story and novel is traced from Homer to the Medieval Greek and Latin romance writers. Selections from Petronius, the *Cena Trimolchionis,* and from Apuleius, *Cupid and Psyche.*

202. Drama. II. 3 hr. PR: Latin 12, 22, or equiv. A brief history of the origin and development of Greek and Roman drama. The *Menaechmi* of Plautus, the *Andria* of Terence, and the *Medea* of Seneca are read in Latin.

203. Oratory. II. 3 hr. PR: Latin 12, 22, or equiv. A bird's eye view of Greek and Roman oratory is given and part of the first book of Cicero's *DeOratore;* selections from Quintilian's *Institutes* and from Tacitus' *Dialogus de Oratoribus* are read in Latin.

227. Vulgar Latin—Prose and Verse. I. 3 hr. PR: Latin 12, 22 or equiv. Selections from Latin inscriptions with a view of studying the development of the Latin language from its earliest times; also selections from medieval and later Latin writers are read which show the passing of the Latin language into the Romance languages.

231. Satire. II. 3 hr. PR: Latin 12, 22, or equiv. Greek satirical writings and the origin of the Roman satire. Selections in Latin from the Satires and Epistles of Horace, and from the Satires of Persius and Juvenal.

234. History. I. 3 hr. PR: Latin 12, 22, or equiv. The origin and development of Roman historiography and its Greek antecedents. Selections in Latin from Livy's *History,* Tacitus' *Agricola,* and from Suetonius' *Julius Caesar.*

235. Epic. I. 3 hr. PR: Latin 12, 22, or equiv. The origin and development of the Greek and Roman epic. Selections from Vergil's *Aeneid,* from Lucretius' *De Rerum Natura,* and from the earlier and later epic poets in Latin.

236. Philosophy. II. 3 hr. PR: Latin 12, 22, or equiv. The origin and development of Greek philosophy and its influence upon Roman philosophy. Selec-

tions from Cicero's *Tusculan Disputations* on the immortality of the soul and from Seneca's *Epistles* in Latin.

Graduate Division

381, 382. Seminar. Introduction to Research. I, II. 3 hr. per sem. PR: At least three courses of upper-division Latin, or equiv. Methods of textual, literary, and historical criticism. Evaluation of text, sources, and background of an author, whose principal work is studied and analyzed.

383, 384. Thesis. I, II. 3 hr. per sem. Six hours of credit are allowed for a thesis, required for the degree of Master of Arts in the department. A controversial subject, or a little-explored subject is usually assigned, intended not only to acquaint students with the subject matter and to develop the various sides of research method, but also to produce a creditable piece of research.

GREEK

1. Elementary Greek. I. 3 hr. A course in the elements of the Greek language.
2. Selections from Greek Literature (Prose). II. 3 hr.
3. Selections from Greek Literature (Poetry). I. 3 hr.
4. Selections from Hellenistic and Biblical Greek Literature. II. 3 hr.
5. Selections from Medieval and Modern Greek Literature. I. 3 hr.
6. Selections from the Attic Orators. II. 3 hr.

Graduate Division

207. Special Topics. I. 3 hr. PR: Greek 6.

208. Special Topics. II. 3 hr. PR: Greek 6.

ECONOMICS

Professors Campbell, Alvis, Coleman, L. Fishman, Roberts, and Thompson; Associate Professor Gavett; Assistant Professors Braff, Mischaikow, Newhouse, and Stocks; Lecturer B. Fishman.

In September, 1952, the Department of Economics and Business Administration in the College of Arts and Sciences was replaced by the College of Commerce. Since its establishment, the College of Commerce has offered all courses in economics and has granted the B.S. degree in Economics, while the College of Arts and Sciences has continued to grant the A.B. degree in this field.

A brief explanation of the difference between the B.S. and A.B. program in Economics may be helpful to prospective Economics majors. The course of study leading to the B.S. degree is aimed primarily at preparing the student for a career in business. Consequently, the student selecting this program is required to complete courses in accounting, business writing, and business finance, as well as courses in Economics and must take about one-half of his elective courses with the College of Commerce. The program leading to the A.B. degree is designed for students who wish to combine fundamental training in economics with broad, general training in other fields. Thirty or more credit hours, from a total of the 128 required for graduation, are available for elective subjects. There are two principal requirements which apply to the A.B. program in economics, but do not apply to the B.S. program. These are the requirements that the student must complete twelve hours in a foreign language, and nine upper-division hours in a minor field other than economics.

A candidate for the A.B. degree with a major in Economics must complete a minimum of 128 semester hours for graduation. English 0, if taken, may not be counted in this total, and required courses in Physical Education and required courses

in basic Military Science or Air Science may be counted only to the extent of 4 hours. He must also complete at least 24 semester hours in upper-division economics courses. A minimum of 58 semester hours must be completed in the upper-division level. Of these, not less than 9 upper-division hours must be earned in a minor field approved by the candidate's adviser.

Lower-Division Program. The curriculum of the lower division is designed to provide a background for the study of Economics. The following courses are required and students are expected to complete them within the first two years of residence at the University.

FIRST YEAR				SECOND YEAR			
First Sem.	*Hr.*	*Second Sem.*	*Hr.*	*First Sem.*	*Hr.*	*Second Sem.*	*Hr.*
English 1	3	English 2	3	Econ. 1	3	Econ. 2	3
Foreign lang.[13]	3	Foreign lang.[13]	3	Foreign language	3	Foreign language	3
Group 1 elect.	3-4	Group 1 elect.	3-4	Pol. Sci. 2 or Hist. 52	3	Pol. Sci. 120 or Hist. 53	3
Laboratory Sci.[14]	4	Laboratory Sci.[14]	4	Elective	4	Speech 11	3
Phys. Ed.	1	Phys. Ed.	1	Math. 3	3	Elective	4
Mil. or Air Sci. 1	2	Mil. or Air Sci. 2	2	Mil. or Air Sci. 3	2	Mil. or Air Sci. 4	2
		Elective	1				
	16 or 17		16 or 18		18		18

Upper-Division Program. The following courses are required of all Economics majors:

Econ. 111. Money and Banking
Econ. 115. Labor Problems
Econ. 125. Statistics
Econ. 221. Economic Theory
Econ. 222. History of Economic Thought

In addition to the above courses, candidates must complete a minimum of 9 upper-division hours in Economics.

Courses of Instruction

Lower Division

1. Principles of Economics. I, II. 3 hr. Organization and principles of economic activity. Freshmen are not admitted to Econ. 1 and 2. Staff

2. Principles of Economics. I, II. 3 hr. PR: Econ. 1. Continuation of Econ. 1. Econ. 2 is prerequisite to all upper-division courses in economics. Staff

*Upper Division**

111. Money and Banking. I, II. 3 hr. Our system of monetary and banking arrangements, viewed in relation to functioning of the economic system as a whole. Mr. Fishman

115. Labor Problems. I, II. An introduction to labor economics and labor relations in industry, including the interaction of economic forces, union policies, personnel practices and labor law. Mr. Stocks

125. Statistics. I, II. 3 hr. PR: Math. 2 or 3. Methods of collecting, presenting, analyzing, and interpreting business data, with special emphasis on the analysis of frequency distribution, trend fitting, seasonal corrections, forecasting, and index numbers. A two-hour laboratory session is required in this course. Mr. Braff

[13]See language requirements for College of Arts and Sciences.

[14]A laboratory science may be chosen from biology, chemistry, physics, botany, zoology, psychology, geology, or physical science.

*Economics 2 is prerequisite to all upper-division courses in economics.

205. Current Economic Problems. S. 3 hr. PR: Econ. 1 and 2 or consent. For students in Education only. A course designed to acquaint public school teachers with reliable source materials in economics and to instruct them in studying current economic problems. Mr. Campbell

209. Problems in Economics. I, II. 1-3 hr. Staff

210. Comparative Economic Systems. I. 3 hr. Structure and process of existing economic systems throughout the world, including review of basic principles of free enterprise, socialistic, communistic, and fascistic societies. Comprehensive analysis based on current and recent experiments in these economies. Mr. Mischaikow

217. Trade Unionism. I. 3 hr. PR: Econ. 115 or consent. An analysis of the structure, government, attitudes, and policies of organized labor; the implication of union policy. Mr. Gavett

218. Collective Bargaining. II. 3 hr. PR: Econ. 115 or consent. Theory and practice in collective bargaining; including contract issues, types of relationships and the role of government policy. Mr. Gavett

219. The Economics of Wages and the Labor Market. II. 3 hr. PR: Econ. 115 or consent. Determination of wage levels and structure; the functioning and organization of labor markets. Mr. Gavett

221. Economic Theory. I. 3 hr. Training and experience in use of analytical methods and techniques needed in dealing with fundamental economic problems. Mr. Braff

222. History of Economic Thought. II. 3 hr. Economic ideas in perspective of historic development. Mr. Thompson

225. Transportation. I. 3 hr. Development of an inland transportation system and relations and policies of transport agencies. Mr. Campbell

230. Public Utilities. II. 3 hr. Development of regulation; economics of valuation and rate making. Mr. Campbell

235. Economic Growth and Business Cycles. I. 3 hr. PR: Econ. 125, or consent. Industrial fluctuations; causes and possible remedies. Mr. Fishman

241. Public Finance. I. 3 hr. Governmental fiscal organization and policy; taxes and tax systems with particular emphasis upon the Federal Government and the State of West Virginia. Mr. Alvis

245. Government and Business. II. 3 hr. Government in its role of adviser and umpire; analysis of governmental policies and practices affecting business. Mr. Newhouse

250. International Trade. II. 3 hr. PR: Consent. Development of trade among nations, theories of trade, policies, physical factors, trends, and barriers. Mr. Alvis

256. Advanced Statistics. II. 3 hr. PR: Econ. 125 or equiv. Correlation, index numbers, time series analysis, statistical inference, and population forecasting. Mr. Braff

301. Managerial Economics. I. 3 hr. An analysis of markets and the problems of management in appraising business conditions and in adjusting to changes in production demand, costs, level of output, and profits. Staff

302. Research and Reports. I. 3 hr. A study of sources of business information and research procedures, with application in the preparation of reports. Mr. Coleman

310. Contemporary Economic Theory. II. 3 hr. PR: Econ. 221. Recent developments in economic theory such as those relating to imperfect competition, monetary problems, and collectivist economy. Staff

315. Bibliography and Research. I. 2 hr. Sources of information, research procedures, analysis and interpretation of data, preparation of manuscripts. Mr. Coleman

319. Seminar in Economics. II. 3 hr. Mr. Fishman

331, 332. Thesis. I, II. 2 or 3 hr. Staff

ENGLISH LANGUAGE AND LITERATURE

Professors Brawner, Bishop, Crocker, Draper, Foster, and Gainer; Associate Professor Pettigrew; Assistant Professors Buswell, Hicks, Johnston, Page, and Pitts; Instructors Ashburn, Board, Bonar, Coffron, Coley, Davis, Dawson, Dowdell, Echols, Finton, Franklin, Futrell, Gaskins, Hankins, Holden, Howard, Hypes, Kinnaird, Law, Leonian, Milum, Modlin, Reed, Rousseau, Scott, Spindler, Stasny, and Tower.

A student who expects to major in English should complete lower-division survey courses in English and American literature (English 3, 4, 5, and 6). These courses, however, are not absolute prerequisites to entrance into the program of major studies in English. If a student who is accepted as a major has not had the lower-division survey courses, he will be expected to compensate for this deficiency by taking certain upper-division courses that will be suggested by the departmental adviser.

Advisers of upper-division students who are not English majors may schedule them for English courses in the "100" series without regard to prerequisites. In order to qualify for registration in a course in the "200" series, however, a student is expected to have had prior work in upper-division courses.

Teacher Certification for English Majors

A student may take the A.B. degree in the College of Arts and Sciences with a major in English and at the same time qualify for teacher certification. In general such a student will satisfy the requirements for the first teaching field in English while completing courses for his major. His second teaching field will be correlated with his minor subject in Arts and Sciences. He will complete 20 hours of prescribed courses in Education. The second teaching field for English teachers may be Speech Library Science, Art, French, Spanish, German, Latin, or Social Studies. Other combinations are possible.

During the first two years, the courses chosen are largely governed by the basic two-year program required of all candidates for teacher certification. See the University bulletin *Teacher Training Programs*. These requirements generally satisfy the group or "distribution" requirements of Arts and Sciences.

By carefully planning his program, a student may complete all requirements for the A.B. degree and for teacher certification within four years. A mimeographed summary of all requirements which must be met in the combined program are available at the Department of English office.

Choice of Two Majors in English

The prescribed upper-division program for majors in English requires the student to complete courses in both English literature and American literature and allows him to determine the relative emphasis he will give to each. Three upper-division courses (Group "A") are required of all majors. Credit for this group is 9 hours. Twelve additional hours are chosen from groups "B" and "C" according to the student's desire to emphasize English literature or American literature. The plan is shown as follows:

GROUP A (9 hr. required of all English majors):

1. English 142. Shakespeare. 3 hr.
2. English 234. Chaucer. 3 hr.
3. English 230. History of the English Language. 3 hr.

Choice of twelve additional hours of upper-division work, as follows:
Emphasis on English Literature: 9 hr. from Group B, 3 hr. from Group C.
Emphasis on American Literature: 3 hr. from Group B, 9 hr. from Group C.

GROUP B:

1. English 138. English Literature, 1660-1774. 3 hr.
2. English 139. English Literature, 1744-1798. 3 hr.
3. English 140. Elizabethan Poetry and Prose. 3 hr.
4. English 141. Literature of the 17th Century. 3 hr.
5. English 249. The Romantic Movement. 3 hr.
6. English 257. Victorian Poetry. 3 hr.
7. English 258. Victorian Prose. 3 hr.

The departmental adviser may allow the substitution of certain cognate period courses in English literature for any of those listed in this group; namely, courses in the literature of the Early English period, the Middle Ages, the 16th, 17th, 18th, 19th, and 20th centuries.

GROUP C:

1. English 166. American Fiction. 3 hr.
2. English 222. American Biography. 3 hr.
3. English 239. Southern Writers. 3 hr.
4. English 250. American Romanticism. 3 hr.
5. English 270. American Poetry. 3 hr.

English majors are strongly advised to study a second foreign language if possible. For the first choice of a foreign language, the Department recommends French or German.

History 133 and 134 were formerly required of all English majors. The requirement is now not absolute; but the English major will schedule these courses unless he is precluded from doing so by the demands of the other parts of his program of studies.

HONORS PROGRAM

At the beginning of the second semester of his junior year, an English major who has achieved an over-all grade-point average of 3.00 or better, and whose record in English studies is above 3.00, may apply for admission to the Honors Program of the Department (see page 145).

Suggested Semester Programs

Lower Division

The following lower-division course program is suggested for pre-English majors. The "electives" refer to groups 1, 2, 4, and 5 of "Distribution Requirements" in Arts and Sciences, and the numbers refer to these groups. The footnotes indicate choices that should be made by the teacher trainee in order to combine these requirements with those of the teacher-training curriculum.

FIRST YEAR*				SECOND YEAR*			
First Sem.	*Hr.*	*Second Sem.*	*Hr.*	*First Sem.*	*Hr.*	*Second Sem.*	*Hr.*
English 1	3	English 2	3	English 3 or 5	3	English 4 or 6	3
English 3 or 5	3	English 4 or 6	3	Foreign language	3	Foreign language	3
Foreign language	3	Laboratory Sci.	4	Elective (Groups		Electives (Groups	
Laboratory Sci.	4	Foreign language	3	2, 4, 5)	9-11	2, 4, 5)	9-11
Hist. or		Hist. or		Phys. Ed.	1	Phys. Ed.	1
Humanities	3-4	Humanities	3-4	Mil. or Air Sci.	3 2	Mil. or Air Sci.	4 2
Phys. Ed.	1	Mil. or Air Sci.	2 2				
Mil. or Air Sci.	1 2	Phys. Ed.	1				
	17-19		17-19		17-19		17-19

THIRD YEAR**				FOURTH YEAR**			
First Sem.	*Hr.*	*Second Sem.*	*Hr.*	*First Sem.*	*Hr.*	*Second Sem.*	*Hr.*
English 142	3	Upper-division English B or C	3	English 234	3	English 230	3
English (Groups B or C)	3	Minor Subject	3-6	English (from group B or C)	3	English (from group B or C	3
Minor Subject	3	Electives	8-12	Minor Subject	3	Minor Subject	3
Electives	8-10			Electives	9	Electives	9
	17-19		17-19		18		18

**Special Note for Students Preparing for Teacher Certification*:

For the science requirement, choose the general course in Biology or in Physical Science. To satisfy Arts and Sciences Group 4, choose Speech 3, 6, 11, or 29. For Group 2, take Social Sci. 1 and 2. Other courses to work into your program as early as possible are Music 10 and Art 30 or 130, although Art 130 must be postponed and taken for upper-division credit. If your second field is to be Social Studies, you may postpone satisfying Arts and Sciences Group 5, and take Geography as upper-division credit. In the last semester of your second year take Educ. 105. For guidance in all these matters, study the bulletin "Teacher Training Programs—Requirements for Certification."

**For those preparing for teacher certification, the hours allowed for "electives" will be devoted to satisfying the requirements for certification. The requirements that must be satisfied are as follows:

(a) Any courses in the two-year general program for teachers that may not have been taken during the student's lower-division years. Check especially for English 18; Hist. 1 and 2 or Humanities 1 and 2; Social Sci. 1, 2; Music 10; Art 30; Health Educ. 101.
(b) Certain specific requirements for the English first teaching field, if not already met: Speech 3, 6, 11, or 29; 5 to 6 hr. additional, chosen from Journ. 215 (2 hr.), Libr. Sci. 1 or 101, (3 hr.), Speech 162 (3 hr.).
(c) Requirements of a second teaching field, insofar as they do not coincide with the student's Arts and Sciences minor.
(d) Twenty hours of Education, including practice teaching.

Courses of Instruction

Lower Division

0. English Composition. I, II. 3 hr. Required of all students who fail to qualify for English 1 on the Freshman English placement test. Staff

1. Composition and Rhetoric. I, II. 3 hr. Required of all candidates for the bachelor's degree in all colleges. Advanced sections are provided for students who made exceptionally high grades on the Freshman English placement test. Staff

2. Composition and Rhetoric. I, II. 3 hr. Continuation of English 1. Required of all candidates for the bachelor's degree in all colleges. Advanced sections are provided for students who make exceptionally high grades on the Freshman English placement tests. Staff

3. Survey: English Literature. I, II. 3 hr. English authors from Beowulf to Burns and readings from their works. Upperclassmen may substitute English 163 for this course. Staff

4. Survey: English Literature. I, II. 3 hr. English authors from Robert Burns to the present and readings from their works. Upperclassmen may substitute English 164 for this course. Staff

5. American Literature. I, II. 3 hr. American authors to 1870 with readings from their works. Staff

6. American Literature. I, II. 3 hr. American poetry and prose from 1870 to the present. Continuation of English 5. Staff

13. Expository Writing. I, II. 2 hr. PR: English 1 and 2. Extensive practice in the various types of expository writing, together with the study of techniques. Staff

15. Description and Narration. I, II. 3 hr. PR: English 1, 2. Exercises in descriptive and narrative writing. Emphasis on practical aspects as well as upon the imaginative and the aesthetic. Staff

18. Advanced English Composition (Written and Spoken). I, II. 3 hr. PR: English 1 and 2. Practice in the organization of thought and in the correct and effective use of the language in writing and speaking, with emphasis on the various types and techniques of exposition. Staff

25. Introduction to Poetry. I, II. 3 hr. A nontechnical approach to poems selected for their intrinsic interest and ease of comprehension. Designed to instruct and give pleasure. Staff

26. Introduction to Fiction. I, II. 3 hr. A companion course to English 25 and English 27 in the reading of works of fiction selected for their interest and significance to the general reader. Emphasis on appreciation and enjoyment. Mr. Futrell

27. Introduction to Drama. I, II. 3 hr. How to read, enjoy, and judge significant plays. Designed for the general student, not the specialist, with a view to developing a lasting interest in dramatic literature. Staff

Upper Division

100. Honors Course. I, II. 3 hr. Independent reading and study. For students admitted to the Honors Program in the second semester of their junior year. Staff

115. Creative Writing: Narration (Short Story). II. 3 hr. Purpose and pattern of the modern short story; study of examples in the current periodicals; special assignments and conferences with individual students on a minimum number of short stories. Mr. Johnston

123. Business English. I, II. 3 hr. PR: English 18. Technical writing; assembling and analysis of economic and commercial data; writing of reports; business correspondence. Primarily for students enrolled in the College of Commerce. Mrs. Law and Staff

125. Advanced Composition. I. 3 hr. The forms and techniques of expository writing, designed primarily for students in nontechnical fields. Mr. Davis

126. Advanced Composition. I, II. 3 hr. Technical forms of writing; designed particularly for students in science and engineering. Mrs. Buswell and Staff

127. Introduction to Literature (Part I). I, II. 3 hr. PR: English 1, 2. A course in the reading of stories, novels, plays, and poems for understanding and enjoyment. Arranged according to types and themes rather than according to literary history, and designed for students from all fields. Satisfies any general requirement in literature. Staff

128. Introduction to Literature (Part II). II. 3 hr. PR: English 1, 2. A continuation of English 127, with emphasis upon fiction, drama, and poetry to be read for understanding and pleasure. May be taken independently of English 127. Staff

129. Words and Usage. II. 3 hr. A practical course in vocabulary building and in English grammar and usage. Attention is given to the derivation, history, and meaning of words, and to the principles of syntax and grammar. Mr. Kinnaird and Staff

138. English Literature, 1660-1744. I. 3 hr. Study of the literature from the Restoration to the death of Pope, exclusive of the drama. Mr. Crocker

139. English Literature, 1744-1798. II. 3 hr. A study of literature from the death of Pope to the publication of Wordsworth's *Lyrical Ballads*, exclusive of the drama. Mr. Crocker

140. Elizabethan Poetry and Prose. I. 3 hr. A study of the Renaissance in England as manifested in the great variety of nondramatic literary works of

the sixteenth century, with emphasis on the major writers of the reign of Elizabeth. Mr. Draper and Mr. Foster

141. Literature of the 17th Century. II. 3 hr. A consideration of the major poets and prose writers of the 17th century, with the exception of dramatic writings. Mr. Foster and Staff

142. Shakespeare. I, II. 3 hr. A study of twelve of Shakespeare's most important plays. Mr. Brawner, Mr. Draper, Mrs. Pettigrew, and Mr. Pitts

160. Contemporary Literature. I. 2 hr. A study of modern British and American poets and prose writers—including novelists, short-story writers, dramatists, and essayists. Chronology is roughly from 1900 to 1925. Mr. Foster

161. Contemporary Literature. II. 2 hr. A continuation of English 161 from approximately 1925 to the present time. Mr. Foster

163. English Literature. I, II. 3 hr. Survey: English Literature from the beginning to 1800. May be substituted for English 3 but may not be elected by students who already have credit for English 3. Staff

164. English Literature. I, II. 3 hr. Continuation of English 163 from 1800 to the present. May be substituted for English 4 but may not be elected by students who already have credit for English 4. Staff

166. American Fiction. I. 3 hr. The reading of ten or more of the most important American novels from Hawthorne to the present day, each considered as a work of art reflecting a significant view of life. Lectures on the works of principal authors, with class discussion of particular books. Mr. Brawner and Mr. Hicks

173. Poetry. I, II. 2 hr. The appreciation and enjoyment of poems through critical and analytical reading. Studies in the various types of poetry, and of the language, imagery, and techniques of poetic expression. Mr. Brawner and Mrs. Buswell

175. The Short Story. I. 2 hr. A study of the historical development of the short story and of the schools into which the work of short story writers is divided. Mr. Bishop

180. Bible Literature: Old Testament. I. 3 hr. The various types of literature exemplified in the Old Testament, read for their intrinsic merit and for their historical and cultural significance. Continued in English 181. Mr. Hicks

181. Bible Literature: New Testament and Apocrypha. II. 3 hr. The contents of the New Testament, its literary quality, with consideration of its historical relations and of the relationships of the several writers represented. Because of the difficulty of treating the wealth of materials of the Old Testament during the one semester of English 180, the first part of this course will be devoted to continuation of the study of certain books of the Old Testament. Mr. Hicks

182. Masterpieces of Literature. II. 3 hr. Intensive study of significant literary works, to be specified when the course is scheduled. Staff

198. Honors Course. I, II. 3 hr. For the first semester of the senior year of students admitted to the Honors Program. Staff

199. Honors Course. I, II. 3 hr. For students in the Honors Program; final semester of senior year. Staff

Upper-Division and Graduate Courses

222. Modern American Biography. I. 3 hr. A selection of the most significant and interesting biographies and autobiographies of Americans of distinction in literature, the arts, and public life. Miss Page

223. Modern British Biography. II. 3 hr. Representative works by such eminent masters of biography by Lytton Strachey, Sir Osbert Sitwell, Lord David Cecil, Sean O'Casey, Hugh Kingsmill, and others. Miss Page

*224. Literary Criticism. II. 3 hr. Literary criticism from Aristotle to modern times. Staff

225. Recent Literary Criticism. II. 3 hr. A brief survey of the theories and essays of our major schools of modern criticism and an application of these theories to a novel, a play, and to selected poems and short stories. Mr. Foster

228. Advanced Grammar. I, II. 3 hr. A course in descriptive grammar, the parts of speech, construction, and methods of diagramming. Mr. Bishop

230. History of the English Language. I. 3 hr. A study of the nature of the language; questions of origins, language families, development, and relationships of English as one of the Indo-European languages. Mr. Pitts

*231. Old English. I. 3 hr. A study of Anglo-Saxon grammar, with selected reading from the literature of the period. Staff

*232. Beowulf. II. 3 hr. PR: English 231. Continuation of the study of Old English; critical reading of *Beowulf*. Staff

234. Chaucer. I. 3 hr. A study of Chaucer's *Canterbury Tales* and *Troilus and Criseyde*. In addition to an understanding and appreciation of Chaucer's literary work, the student is expected to acquire an adequate knowledge of Chaucer's language. Mr. Brawner

235. Shakespeare. I. 3 hr. A course for undergraduates and graduates in the detailed study of three of Shakespeare's major plays. Mr. Draper

239. Southern Writers. II. 3 hr. Examination of twentieth-century Southern essayists, poets, short-story writers, and novelists in relation to the ideological background. Mr. Foster

242. Literature for Teachers. S. 3 hr. Study and appreciation of selected works of American authors, with special reference to the high-school curriculum. Given usually in the summer session. Mr. Hicks

243. Literature for Teachers. S. 3 hr. Study and appreciation of selected works of English authors. Recommended for teachers of high-school English. Given usually in the summer session. Mr. Hicks

*244. Literature of the Sixteenth Century. I. 3 hr. Renaissance in England as reflected in literature, with some consideration of the fine arts and other aspects of culture. Mr. Draper

*245. Literature of the Seventeenth Century. II. 3 hr. The struggle between Cavalier and Puritan as reflected in the literature of the age. Mr. Draper

*247. Literature of the Eighteenth Century. I. 3 hr. The culture-history of England, 1700-1750, as expressed in social, economic, political, and religious movements, and as reflected in literature. Mr. Draper

*248. Literature of the Eighteenth Century. II. 3 hr. A continuation of English 247, covering the period from 1750-1800. Mr. Draper

249. The Romantic Movement. I. 3 hr. The works of Wordsworth, Coleridge, and Keats, together with an introduction to works of scholarship in the field of English Romanticism. Mr. Brawner

250. American Romanticism. II. 3 hr. The writing of Ralph Waldo Emerson, Henry David Thoreau, and Nathaniel Hawthorne. A study of the relations of these men to the history of their own time, and of their contributions to American thought and art. Mr. Brawner

*Given only in alternate years.

*252. Modern English Literature, 1881-1918. I. 3 hr. A consideration of the revolt against mechanism, the new romanticism, doctrines of action, and contemporary tendencies. Mr. Crocker

*253. Pre-Shakespearean Drama. I. 3 hr. A study of the medieval drama from its beginning to the middle of the 16th century. Mr. Crocker

*254. Elizabethan Drama. II. 3 hr. A study of the dramatists of the Elizabethan period, exclusive of Shakespeare. Mr. Crocker

*255. Restoration and Eighteenth Century Drama. I. 3 hr. A study of persistent forms and new developments in the drama of the period. Mr. Crocker

256. Modern Drama. II. 3 hr. A study of world drama from Ibsen to the present day, with particular reference to -isms and ideas. Mr. Crocker

257. Victorian Poetry. I. 3 hr. A study of the major Victorian poets—Tennyson, Browning, Arnold, Rossetti, Morris, Swinburne, Fitzgerald, and a few of the later Victorian poets. Mr. Gainer

258. Victorian Prose. II. 3 hr. A study of the nonfictional writings of the great Victorian prose critics: Carlyle, Ruskin, Arnold, Newman, Macaulay, Huxley, Morris. Mr. Gainer

259. Dramatic Art of Shakespeare. II. 3 hr. A study of several of Shakespeare's histories, comedies, and tragedies, showing the chronological development of his art and matters of stage presentation in Shakespeare's age. Mr. Bishop

260. Studies in Shakespearean Comedy. I, II. 3 hr. PR: English 142, or consent. Textual and dramatic study of representative comedies. Mrs. Pettigrew

261. Technique of the Drama. I. 2 hr. A study of dramatic structure, with emphasis upon appreciation. Mr. Crocker

262. Study of Selected Authors. (American). I, II. 3 hr. A study of the works of a principal American author, or of more than one, as announced when the course is scheduled. Staff

263. Study of Selected Authors. (English). I, II. 3 hr. Study of the works of one or more of the principal English authors, as announced in the schedule when the course is listed. Staff

*264. Spenser. I. 3 hr. A study of Spenser's minor poems and *The Faerie Queen;* forms and sources, purpose of the great epic, social, political, and religious allegory. Staff

265. Byron and Shelley. II. 3 hr. Reading and study of the works of two poets of the later Romantic Movement, together with works of criticism and scholarship related to the period. Mr. Gainer

267. Milton. I, II. 3 hr. A study of Milton's poems and of a few selected prose works. Mr. Gainer

270. American Poetry. I. 3 hr. A study of the major American poets of the nineteenth and twentieth centuries—Bryant, Poe, Emerson, Longfellow, Whitman, Dickinson, Frost, Eliot. Mr. Foster

272. Folk Literature. II. 3 hr. A study of the folk ballad, its origin, history, and literary significance, based on Child's collection and on American ballad collections. Mr. Gainer

275. The English Novel to the Time of Scott. I. 3 hr. A study of the English novel from the 16th century to the time of Scott, showing the development of the novelistic art from early narrative beginnings. Mr. Bishop

*Given only in alternate years.

276. The English Novel, 1832-1900. II. 3 hr. A continuation of English 275. The development of the English novel from the early 19th century to the beginning of the 20th century. Mr. Bishop

278. Tragedy. II. 3 hr. Masterpieces of tragedy from Greek times to modern, with consideration of the changing concepts of tragedy and of the ethical and ideological values reflected in the works of major tragic authors. Mr. Brawner

280. The Modern Novel. I, II. 3 hr. The twentieth century novel, with emphasis upon the works of selected British novelists, together with a study of changing techniques during recent times. Mr. Johnston and Staff

291. Introduction to Literary Research. I, II. 2 or 3 hr. Lectures and exercises in research problems to prepare the student for such work in graduate and professional schools. Mr. Draper

Graduate Division

392. Seminar. I, II. 2 or 3 hr. PR: Specific courses to be approved by the instructor. A graduate study of particular periods or authors. Staff

GEOLOGY AND GEOGRAPHY

Professors Wells, Fridley, Heald, Ludlum, and Price; Assistant Professors Burford, and Donaldson; Instructor (part-time) Gillespie.

BACHELOR OF SCIENCE IN GEOLOGY

Each candidate for the Bachelor of Science degree is required to present credit for Geol. 266 or its equivalent and must minor in an allied science (at least nine hours of upper-division credit). Students planning to seek employment in the petroleum industry should minor in mathematics. A total of 132 hours is required, of which a minimum of 124 hours must be established in subjects exclusive of credits earned in required Physical Education, required Military or Air Science, English 0, and Math. 2.

At least 9 hours of electives must be taken in the humanities or social sciences. The requirements are as follows:

FIRST YEAR				SECOND YEAR			
First Sem.	*Hr.*	*Second Sem.*	*Hr.*	*First Sem.*	*Hr.*	*Second Sem.*	*Hr.*
English 1	3	English 2	3	Foreign language	3	Foreign language	3
Foreign language	3	Foreign language	3	Geol. 1	3	Geol. 3	3
Math. 3	3	Math. 4	3	Geol. 2	1	Geol. 4	1
Physics 1	4	Physics 2	4	Chem. 1	4	Chem. 2	4
Mil. or Air Sci. 1	2	Mil. or Air Sci. 2	2	Math. 5	4	C.E. 1	2
Phys. Ed. 1	1	Phys. Ed. 2	1	Mil. or Air Sci. 3	2	Mil. or Air Sci. 4	2
						Electives	3
	16		16		17		18

THIRD YEAR				FOURTH YEAR			
First Sem.	*Hr.*	*Second Sem.*	*Hr.*	*First Sem.*	*Hr.*	*Second Sem.*	*Hr.*
Geol. 127	2	Geol. 161	3	Geol. 221	3	Geol. electives	4
Geol. 151	3	Geol. 185	4	Geol. 231	4	Other electives	13
Geol. 152	1	English 126	3	Geol. electives	4		
Geol. 172	3	Electives	7	Other electives	6		
Geol. 184	4						
Electives	5						
	18		17		17		17

BACHELOR OF ARTS IN GEOLOGY

The minor subject for this degree need not be a science and Math. 5 is not required. At least nine hours more of the Social Sciences and Humanities are required for the A.B. than the B.S. degree in Geology. A minimum of 124 hours must be established in subjects exclusive of credit earned in required Physical Education, required Military Science and Air Science, English 0, and Math. 2.

FIRST YEAR				SECOND YEAR			
First Sem.	*Hr.*	*Second Sem.*	*Hr.*	*First Sem.*	*Hr.*	*Second Sem.*	*Hr.*
English 1	3	English 2	3	Foreign language	3	Foreign language	3
Foreign language	3	Foreign language	3	Geol. 1	3	Geol. 3	3
Math. 2 or 3	3	Math. 4	3	Geol. 2	1	Geol. 4	1
Physics 1	4	Physics 2	4	Chem. 1	4	Chem. 2	4
Mil. or Air Sci. 1	2	Mil. or Air Sci. 2	2	Mil. or Air Sci. 3	2	Mil. or Air Sci. 4	2
Phys. Ed.	1	Phys. Ed.	1	Phys. Ed.	1	Phys. Ed.	1
				Electives		Electives	
				*Group 2	3-4	*Group 2	3-4
	16		16		17-18		17-18

THIRD YEAR				FOURTH YEAR			
First Sem.	*Hr.*	*Second Sem.*	*Hr.*	*First Sem.*	*Hr.*	*Second Sem.*	*Hr.*
Art 115	3	Geol. 129	2	Geol. 127	2	English 126	3
Geol. 107	3	Geol. 161	3	Geol. 221	3	Electives	14
Geol. 151	3	Chem. elective	3	Geol. 231	4		
Geol. 152	1	Elective	3	Electives	8		
Geol. 184	4	***Group 4	3				
Electives		**Group 1	3-4				
**Group 1	3-4						
	17-18		17-18		17		17

*Economics, Political Science, or Social Science (general course)
**History or Humanities (general course)
***Art, Home Economics, Library Science, or Speech

When possible complete lower-division work in the first two years. Leave the courses numbered 200 and above for the senior year.

Courses of Instruction

GEOLOGY

Lower Division

1. Physical Geology. I, II. 3 hr. PR: High school or college chemistry. For science and engineering students. Description of composition and structure of earth; physical processes which change earth's surface. Must be accompanied by Geol. 2 in order to meet requirements for 4 hr. credit in a laboratory science in physical geology. Staff

2. Physical Geology Laboratory. I, II. 1 hr. Accompanies Geol. 1. Staff

3. Historical Geology. I, II. 3 hr. PR: Geol. 1. Evolution of earth and its inhabitants. (Geol. 3 must be accompanied by Geol. 4 in order to meet requirements for 4 hr. of a laboratory science in historical geology.) Mr. Wells

4. Historical Geology Laboratory. I, II. 1 hr. Accompanies Geol. 3. Mr. Wells

5. Introduction to Geology. I, II. 3 hr. Designed especially for nonscience majors. Composition and structure of earth and the geologic processes which shape its surface. (Geol. 5 must be accompanied by Geol. 2 in order to meet the requirements for 4 hr. of a laboratory science.) Mr. Donaldson

Upper Division

125. Geologic Drafting. I. 1 hr. PR: Geol. 2, 4. Staff

127. Map Interpretation. I. 2 hr. PR: Geol. 2, 4. Relation of earth structure and history to land forms as shown on topographic maps. Mr. Burford

129. Cartography. II. 2 hr. Techniques, principles, and practices in art of map and graph construction. Lettering and drawing instruments used in copy and field lay-out designed for reproduction. Staff

151. Structural Geology. I, II. 3 hr. PR: Geol. 3. Shape and position of rock masses in the earth's crust; mechanical principles underlying various types of rock formation; indication of economic importance of deformed rock structures with respect to recovery of mineral products. Mr. Burford

152. Structural Geology Laboratory. I, II. 1 hr. PR: Geol. 3. A laboratory course to accompany or follow the lecture course, Geol. 151. Mr. Burford

161. Field Geology. II. 3 hr. PR: Geol. 151, Geol. 184 or E.M. 106. An introduction to actual field techniques utilized by geologists in mapping and reporting on geology of an area. Local areas in detail; 2-day field trip required for regional study. Mr. Donaldson

172. Economic Geology: Nonmetallics. I. 3 hr. PR: Geol. 1, 2. Occurrence formation, and use of nonmetallic mineral substances, including building materials and chemicals. Staff

184. Mineralogy. I. 4 hr. PR: 1 year each of geology and chemistry. Elements of crystallography and systematic study of minerals except silicates. Identification of minerals by their physical properties supplemented by blow-pipe analysis. Mr. Heald

185. Mineralogy and Petrography. II. 4 hr. PR: Geol. 184. Description, mode of occurrence, and classification of silicate minerals and rocks. Mr. Heald

201. Physical Geology for Teachers. S. 3 hr. PR: Geol. 1 or equiv., high-school teaching certificate, and consent. Composition and structure of earth and the geologic processes which shape its surface. Staff

202. Physical Geology Laboratory for Teachers. S. 1 hr. PR: Geol. 1 and or equiv., high-school teaching certificate, and consent. A laboratory and field study of earth materials and features, and a study of topographic and geologic maps used to represent them. Staff

221. Geomorphology. I. 3 hr. PR: Geol. 151. Study of surface features of eastern United States. Mr. Fridley

222. Geomorphology. II. 3 hr. PR: Geol 151. Continuation of Geol. 221. Surface features of Western United States. Mr. Fridley

228. Photogeology. II. 3 hr. PR: Geol. 127, 151. Instruction in basic and advanced techniques of air photo interpretation. Mr. Burford

231. Invertebrate Paleontology. I, II. 4 hr. PR: Geol. 3, 4. Invertebrate fossils; their biologic classification, evolutionary development, and use in correlation of strata. Mr. Wells

235. Introductory Paleobotany. I. 4 hr. PR: Geol. 3 and/or Bot. 2. A resume of the development of principal plant groups through the ages, present distribution, mode of occurrence and index species, methods of collection. Mr. Gillespie

236. Advanced Paleobotany. II. 4 hr. Continuation of Geol. 235. Mr. Gillespie

239. Seminar in Paleobotany. I, II. 1-2 hr. per sem., 6 hr. max. PR: Geol. 235. Mr. Gillespie

240. Principles of Stratigraphy. II. 4 hr. PR: Geol. 231. Study of principles of rock and time correlation, emphasis on their application to the stratigraphy of West Virginia. Mr. Donaldson

246. Sedimentation. I. 3 hr. PR: Geol. 185. Origin of sedimentary rocks; principles involved in interpretation of ancient geography, climates, animals, and plants, i.e., basic foundations for stratigraphy. Mr. Donaldson

247. Sedimentation Laboratory. I. 1 hr. PR: Geol. 185. A laboratory course to accompany or follow the lecture course, Geol. 246, Sedimentation. Mr. Donaldson

263. Hydrology. I. 3 hr. PR: Geol. 151. A study of the principles of groundwater hydrology; the occurrence, development, uses, and conservation of ground water. The hydrologic cycle emphasized. Mr. Burford

266. Field Geology. SI. 6 hr. PR: Geol. 161, 185, 231. Practical experience in detailed geological field procedures and mapping. Living expenses are in addition to tuition and must be paid on or before registering. Mr. Wells

269. X-Ray Diffraction. I, II. 2 hr. The theory of X-ray diffraction and application to the analysis of crystalline materials using the powder camera and X-ray diffractometer. Open to advanced students in geology, chemistry, engineering and related fields with consent of instructor. Mr. Heald

270. Geology and Mineral Resources. S. 3 hr. PR: Open to students in education having Geol. 1 or its equivalent and consent. A general survey of the character, origin, and distribution of land forms and the natural mineral resources, including mineral fuels, nonmetallic minerals, ore deposits, and ground water with special reference to West Virginia and neighboring regions. Staff

271. Economic Geology: Ore Deposits. II. 3 hr. PR: Geol. 172, 184. Mineral composition, geologic features, and distribution of deposits of principal useful metallic minerals. Staff

272. Petroleum Geology. II. 3 hr. PR: Geol. 151. Origin, geologic distribution, methods of exploration and exploitation, uses and future reserves of petroleum and natural gas in the world, with special attention to the U. S. Mr. Burford

273. Petroleum Geology Laboratory. I, II. 1 hr. PR: Geol. 151. Applications of geologic methods in the search for and development of petroleum resources. Graphic methods in structural and stratigraphic studies, interpretation of lithologic samples and mechanical well logs. Mr. Burford

274. Seminar in Economic Geology. I, II. 1-2 hr. per sem. Staff

275. Coal Geology. I. 4 hr. PR: Geol. 4. Study of origin, nature, and distribution of coal deposits. Includes an introduction to microscopic study of coal specimens. Staff

276. Advanced Coal Geology. II. 4 hr. Continuation of Geol. 275. Staff

285. Optical Mineralogy. I. 4 hr. PR: Geol. 185 and one year of physics. Principles and practice in use of the petrographic microscope in identification of minerals. Emphasis on determinations by immersion method. Mr. Heald

286. Petrology. II. 4 hr. PR: Geol. 285. Composition, texture, occurrence, and origin of rocks. Study of hand specimens and thin sections. Mr. Heald

290. Geologic Problems. I or II. 2-3 hr. Specialized work for seniors and graduates. Consult departmental adviser before registration. Staff

291. Seminar. I. 1 hr. Mr. Donaldson

292. Seminar. II. 1 hr. Mr. Fridley

329. Problems in Geomorphology. I, II. 1-4 hr. PR: Geol. 222. Mr. Fridley

332. Micropaleontology. II. 4 hr. PR: Geol. 231. Identification of Foraminifera and Ostracoda with aid of microscope. Emphasis upon classification, nomenclature, and use of paleontological literature. Mr. Wells

334. Problems in Paleontology. I, II. 1-4 hr. PR: Geol. 231. Mr. Wells

339. Problems in Paleobotany. I, II. 1-4 hr. PR: Geol. 235. Mr. Gillespie

348. Problems in Sedimentation. I, II. 1-4 hr. PR: Geol. 246. Mr. Donaldson

349. Problems in Stratigraphy. I, II. 1-4 hr. PR: Geol. 240. Mr. Donaldson

359. Problems in Structural Geology. I, II. 1-4 hr. PR: Geol. 151. Mr. Burford

366. Problems in Field Geology. I, II. 1-6 hr. PR: Geol. 161. Mr. Donaldson

374. Problems in Advanced Economic Geology. I, II. 1-4 hr. PR: Geol. 271. Staff

376. Problems in Coal Geology. I, II. 1-4 hr. PR: Geol. 276. Staff

387. Advanced Petrology. I. 3 hr. PR: Geol. 286. A study of the composition, classification, and origin of the igneous and metamorphic rocks. Laboratory work consists of a study of crystalline rocks by microscopical methods. Mr. Heald

388. Problems in Mineralogy and Petrology. I, II. 1-4 hr. PR: Geol. 286. Mr. Heald

397, 398. Research. I, II. 1-5 hr., 6 hr. max. Specialized work for advanced students based upon field or laboratory evidence and reported upon in candidacy for Master's Degree. Staff

399. Research. I, II. 1-6 hr. per sem., 12 hr. max., open only to Ph.D. candidates. Staff

GEOGRAPHY

Upper Division

107. Introductory Geography. I. 3 hr. Relationship between environment and forms of life; emphasis on physiography and climatology. Staff

109. Economic Geography. I, II. 3 hr. Regional method of treating agricultural, industrial, and commercial development of each of various countries of the world. Staff

116. Geography of North America. II. 3 hr. A regional study of the area north of the Rio Grande with interpretation of geographic factors influencing growth, and problems connected with future development. Staff

118. Geography of Europe. I. 3 hr. Geographic description of continent as a whole, its political divisions, followed by study of individual regions. Staff

215. Industrial Geography. I. 3 hr. PR: 12 hr. of economics, history, geology. Factors which contribute to development of major industrial regions; detailed analysis of selected industries. Staff

216. Urban Geography. II. 2-3 hr. PR: 12 hr. of economics, history, geology. Study of present day American cities from their distribution, function and internal structure. Field work in local urban centers and their tributary areas will be made. Staff

219. Seminar in Geography. I, II. 1-3 hr. per sem. PR: 12 hr. of economics, history, geology. Staff

Graduate Division

319. Problems in Geography. I, II. 1-4 hr. PR: 12 hr. of social studies and geology. Staff

GERMAN

Professors Lemke and Stilwell; Instructors Ferrante, Huffman, and Taylor.

Students majoring in German are advised to base their schedule of upper-division courses upon the following subjects, which are listed here in the order of their importance: German, education, English, European history, Romance languages, modern philosophy, and political science. Those who are not planning to teach German may omit the courses in education, but the sequence of subjects, from the viewpoint of their desirability for a major in German, remains the same.

Curriculum[15]

Suggested courses for students majoring in German are listed below. Students who wish to earn professional certificates as high school teachers of German are advised to consult the *Announcements* of the College of Education.

PROGRAM OF COURSES FOR MAJORS IN GERMAN

FIRST YEAR				SECOND YEAR			
First Sem.	*Hr.*	*Second Sem.*	*Hr.*	*First Sem.*	*Hr.*	*Second Sem.*	*Hr.*
German 1	3	German 2	3	German 3	3	German 4	3
English 1	3	English 2	3	German 111	3	German 112	3
Electives, Group 1	3-4	Electives, Group 1	3-4	French 1	3	French 2	3
Laboratory Sci.	4	Laboratory Sci.	4	Pol. Sci. 1	3	Pol. Sci. 2	3
Mil. or Air Sci. 1	2	Mil. or Air Sci. 2	2	Mil. or Air Sci. 3	2	Mil. or Air Sci. 4	2
Phys. Ed.	1	Phys. Ed.	1	Phys. Ed.	1	Phys. Ed.	1
	14-17		14-17		16-17		16-17

THIRD YEAR				FOURTH YEAR			
First Sem.	*Hr.*	*Second Sem.*	*Hr.*	*First Sem.*	*Hr.*	*Second Sem.*	*Hr.*
German	6	German	6	German	6	German	3
French 5	3	French 6	3	Electives	9-12	Electives	12-15
Philosophy 4 or 104	3	Speech 3 or 11	3				
Electives	3-6	Electives	3-6				
	15-18		15-18		15-18		15-18

Advanced courses should include German 245 and 251. Recommended minor fields are English, French, Philosophy, History, or Political Science.

Courses of Instruction

Lower Division

1. Elementary German. I, II. 3 hr. Speaking, syntax, reading, composition. Staff

2. Elementary German. I, II. 3 hr. Extensive reading and conversation. Staff

3. Intermediate German. I. 3 hr. Rapid reading of prose by modern authors. Staff

4. Intermediate German. II. 3 hr. Continuation of German 3. Staff

Upper Division

105. The German Novelle. I. 3 hr. Representative stories of Keller, Meyer, Storm, and Stifter. Mr. Lemke

[15]German 1, 2, 3, and 4 are each prerequisite to the next following, and the four combined are prerequisite to all other courses with the exception of German 111, 112, 121 and 122, for which German 1 and 2 are prerequisite.

106. The German Novelle. II. 3 hr. From naturalism to present day. Continuation of German 105. Mr. Lemke

107. Nineteenth Century Drama. I. 3 hr. Critical study of selected dramas by Kleist, Grillparzer, Hebbel, Ludwig. Mr. Lemke

108. Nineteenth Century Drama. II. 3 hr. Continuation of German 107. Mr. Lemke

111. Spoken German. I. 3 hr. Practice in speaking and writing. Staff

112. Spoken German. II. 3 hr. Continuation of German 111. Staff

121. Scientific German. I. 3 hr. Primarily for students in science courses. Staff

122. Scientific German. II. 3 hr. Continuation of German 121. Staff

136. Introduction to Goethe. II. 3 hr. Mr. Lemke

161. Lyric Poetry. I. 3 hr. Mr. Lemke

163. Modern German Prose in English Translation. I. 3 hr. Reading and discussion of outstanding German short stories and a few novels. (No credit allowed for departmental major nor for regular language requirements). Mr. Lemke

201. Independent Reading. I. 3 hr. Supervised reading for students who wish to do intensive work in any field of interest. Mr. Lemke

202. Independent Reading. II. 3 hr. Continuation of German 201. Mr. Lemke

211. Middle High German. I. 3 hr. PR: 12 hr. of German from upper division. Mr. Stilwell

212. Middle High German. II. 3 hr. Continuation of German 211. Mr. Stilwell

231. Advanced Grammar and Composition. I. 3 hr. PR: German 111 and 112, or consent. Intensive review of German grammar with extensive practice in German composition and translation into German. Mr. Stilwell

232. Advanced Composition and Conversation. II. 3 hr. PR: German 231 or consent. Additional practice in composition, with all explanations and discussions conducted in German. Mr. Stilwell

242. Faust. II. 3 hr. Critical study of Goethe's *Faust*. Mr. Lemke

244. German Literature Before Goethe. II. 3 hr. A survey of German literature from its beginnings to the middle of the 18th century. Mr. Stilwell

245. Survey of German Literature, 1766-1870. I. 3 hr. Mr. Lemke

246. Survey of German Literature, 1870-1940. II. 3 hr. Mr. Lemke

251. History of German Language. I. 3 hr. PR: 18 hr. of German or consent. Development since ancient times. Mr. Stilwell

252. German Philology. II. 3 hr. PR: German 251 or consent. Comparison of old Germanic dialects and literatures. Mr. Stilwell

265. German Civilization. I. 3 hr. PR: 12 hr. of German or consent. A general, comprehensive survey of the most important aspects of German culture, including a brief historical background, the development of the German language, geography, science, music, art, architecture, literature, and philosophy. Mr. Lemke and Mr. Stilwell

272. The Romantic Movement. II. 3 hr. Mr. Lemke

275. The Modern Novel. II. 3 hr. PR: 18 hr. of German. Supervised reading of nineteenth century novels. Mr. Lemke

276. The Modern Novel. II. 3 hr. Continuation of German 275, with emphasis on recent fiction. Mr. Lemke

281. Old Norse. I. 3 hr. PR: Consent. Elementary study of Old West Norse prose. Mr. Stilwell

282. Old Norse. II. 3 hr. Readings in various Old Icelandic sagas; introduction to Old Norse poetry. Continuation of German 281. Mr. Stilwell

HISTORY

Professors Summers, Easton, Ennis, and Golay; Associate Professors Barns, Caruso, Levine, and Steel; Assistant Professors Bagby, Houston, and Krauskopf; Instructor Hicks.

Before graduation history majors are required to complete 18 hours in upper-division courses, including Hist. 276, Introduction to Historical Research and Bibliography. Six hours in political science and 6 hours in economics are also required in addition to the special requirements for the A.B. Degree. Students who expect to major in history should complete the following subjects, or their equivalents, in their first and second years: English, 6 hr.; French or German, 12 hr.; history, 12 hr., which should include Hist. 52 and 53 and may include one year's work in either the Humanities or the Social Science general courses; laboratory science, 8 hr.; political science, 6 hr.; and economics, 6 hr.

In planning work in history, students should consult the department in order that advanced courses may be properly correlated as well as suited to individual tastes and needs. One lower division "year-course" or its equivalent in history is prerequisite for a major, but prospective majors are advised to take two such courses.

CURRICULUM FOR A.B. DEGREE WITH MAJOR IN HISTORY

FIRST YEAR				SECOND YEAR			
First Sem.	*Hr.*	*Second Sem.*	*Hr.*	*First Sem.*	*Hr.*	*Second Sem.*	*Hr.*
English 1	3	English 2	3	Electives,		Electives,	
Foreign language	3	Foreign language	3	Group 3*	3	Group 3*	3
Laboratory Sci.	4	Laboratory Sci.	3	Foreign language	3	Foreign language	3
Hist. 1	3	Hist. 2	3	Hist. 52	3	Hist. 53	3
Mil. or Air Sci.	1 2	Mil. or Air Sci.	2 2	Economics 1	3	Economics 2	3
Phys. Ed.	1	Phys. Ed.	1	Pol. Science 1	3	Pol. Science 2	3
				Mil. or Air Sci.	3 2	Mil. or Air Sci.	4 2
				Phys. Ed.	1	Phys. Ed.	1
	14-16		14-16		16-18		16-18

THIRD YEAR				FOURTH YEAR			
First Sem.	*Hr.*	*Second Sem.*	*Hr.*	*First Sem.*	*Hr.*	*Second Sem.*	*Hr.*
History†	6	History	6	Hist. 276	3	History	3-6
Minor	3	Minor	3	History**	3	Minor or	
Electives	6-9	Electives	6-9	Minor	3-6	Electives	3-6
				Electives	6-9	Electives	6-9
	15-18		15-18		15-18		15-18

*Teacher's Certification. In Group 3, English 3 and 4 should be selected.
†History courses numbered 100-199 are recommended.
**History courses numbered 200-299 are recommended.

Courses of Instruction

Lower Division[16]

1. World Civilization from the Earliest Times to the Reformation. I, II. 3 hr. For freshmen. The development of social, economic, and political institutions. Messrs. Easton, Ennis, Evans, Houston, Levine, and Mrs. Hicks
2. World Civilization from the Reformation to the Present. I, II. 3 hr. For freshmen. Continuation of Hist. 1. Messrs. Easton, Ennis, Evans, Houston, Levine, and Mrs. Hicks
52. Growth of American Nation to 1865. I, II. 3 hr. Primarily for sophomores. Messrs. Bagby, Barns, Caruso, Steel, Summers, and Miss Krauskopf
53. Making of Modern America, 1865 to Present. I, II. 3 hr. Primarily for sophomores. Messrs. Bagby, Barns, Caruso, Steel, Summers, and Miss Krauskopf

Upper Division

101. History of Ancient Times: Stone Age to the Fall of Rome.* I. 3 hr. Mr. Evans
102. Medieval Europe: Fall of Rome to Renaissance.* 1. 3 hr. Mr. Evans
103. Modern Europe, 1550-1815. I. 3 hr. Staff
104. Modern Europe, 1815 to Present. II. 3 hr. Staff
117. History of France from Richelieu to the Fourth Republic.* 1 or II. 3 hr. Mr. Easton
118. History of Germany Since the Thirty Years' War.* I or II. 3 hr. Mr. Easton
119. History of Russia from Varangians to Bolsheviks.* I. 3 hr. Mr. Easton
120. Latin-American History: Colonial Period and Wars of Independence. I. 3 hr. PR: 1 year of history or consent. Mr. Caruso
121. Latin America Since 1824. II. 3 hr. Continuation of Hist. 120. Mr. Caruso
133. British Civilization to 1660. I. 3 hr. Mr. Levine
134. British Civilization Since 1660. II. 3 hr. Mr. Levine
149. United States and Pennsylvania. I or II. 3 hr. Mr. Barns
150. West Virginia. I, II. 3 hr. Mr. Summers
151. American Colonial History. I or II. 3 hr. Miss Krauskopf
152. The American Revolution and the Confederation, 1763-1789. 1 or II. 3 hr. Miss Krauskopf
158. The United States from Abraham Lincoln to Theodore Roosevelt. I or II. 3 hr. PR: Hist. 53 or consent. Mr. Summers
164. History of Asia. I. 3 hr. Mr. Ennis
169. History of the United States Since 1918. I or II. 3 hr. Mr. Bagby
179. American Economic History to 1865. I. 3 hr. Mr. Barns

[16]All first and second-year courses are offered as lower-division "year-courses." These courses run through the year, but in no case is the first half-year a prerequisite for the second half. For example, Hist. 1 is not a prerequisite for Hist. 2. Hist. 1 and 2 make up the introductory first year in history. Hist. 52 and 53 are primarily for sophomores but are open to freshmen. Students are not permitted to take both History 1 and 2 during the same semester unless subject to the repeat D-rule in both courses.

*PR: One college course in European history, or consent.

180. American Economic History Since 1865. II. 3 hr. Mr. Barns

181. The American Labor Movement. II. 3 hr. Mr. Barns

182. History of American Agriculture. I or II. 3 hr. Mr. Barns

190. The Cultural History of the American People to 1876. I or II. 3 hr. Mr. Steel

191. The Cultural History of the American People Since 1876. I or II. 3 hr. Mr. Steel

201. Modern Problems in the Ancient and Medieval Worlds. I or II. 3 hr. PR: At least junior standing. Mr. Evans

202. Problems in European History Since 1500. I, II. 3 hr. PR: Hist. 1 and 2 or equiv., or consent. Mr. Levine

205. Medieval Cultural History. I or II. 3 hr. PR: Senior or graduate standing with one year of European history, or consent. Mr. Evans

206. The Renaissance and the Reformation. II. 3 hr. PR: For seniors and graduate students with one year of European history, or consent. Staff

207. Cultural Europe, 1600-1800. I or II. 3 hr. PR: For seniors and graduate students with one year of European history, or consent. Mr. Evans

208. Cultural Europe, 19th Century. I or II. 3 hr. Continuation of Hist. 207. Mr. Easton

209. French Revolution. I. 3 hr. PR: Senior or graduate standing with one year of European history, or consent. Mr. Easton

210. Napoleonic Era. II. 3 hr. PR: Senior or graduate standing with one year of European history, or consent. Mr. Easton

220. History of Contemporary Russia. I or II. 3 hr. PR: Same as for Hist. 207. Mr. Easton

231. The British Empire. I. 3 hr. PR: Hist. 134 or consent. Staff

233. English Social History, Fourteenth to Eighteenth Century. I, II. 3 hr. PR: Junior standing. Mr. Levine

234. English Social History, Eighteenth Century to Present. I or II. 3 hr. PR: Junior standing. Mr. Levine

241. Europe from Sedan to Versailles. I. 3 hr. PR: Hist. 1 and 2 or equiv. Staff

242. Europe from Versailles to Nuremberg. II. 3 hr. Continuation of Hist. 241. Staff

249. The Appalachian Frontier. I or II. 3 hr. PR: Hist. 52 or 53 or equiv. Mr. Caruso

250. Economic and Social Development of West Virginia. I or II. 3 hr. PR: Consent. Primarily for teachers. Mr. Summers

251. The American Colonial and Revolutionary Experience. I or II. 3 hr. PR: Hist. 52. Miss Krauskopf

254. Trans-Mississippi West. I or II. 3 hr. Miss Krauskopf

255. The Jacksonian Era. II. 3 hr. PR: Hist. 52. Mr. Steel

256. The Old South. I, II. 3 hr. For seniors and graduate students, or consent. Mr. Steel

257. The American Civil War. I, II. 3 hr. For seniors and graduate students, or consent. Mr. Summers

258. The Cleveland Era. I or II. 3 hr. For seniors and graduate students, or consent. Mr. Summers

259. The United States from McKinley to the New Deal, 1898-1933. I. 3 hr. PR: Seniors and graduate students, or consent. Mr. Barns

260. American Diplomacy to 1901. I. 3 hr. PR: Hist. 52 and 53, or equiv. Mr. Bagby

261. American Foreign Policy and Diplomacy, 1901 to Present. II. 3 hr. PR: Hist. 53 or equiv. Mr. Bagby

262. Problems of the Pacific. II. 3 hr. PR: Hist. 164. Mr. Ennis

265. American Constitutional Development to 1860. I. 3 hr. PR: Hist. 52 and 53 or equiv. Staff

266. American Constitutional Development Since 1860. II. 3 hr. Continuation of Hist. 265. Staff

269. Recent American History. I or II. 3 hr. For seniors and graduate students, or consent. Mr. Barns

270. Partition of Asia. I or II. 3 hr. PR: Hist. 164. Mr. Ennis

271. Problems in Contemporary Europe. I or II. 3 hr. Continuation of Hist. 242. Staff

276. Introduction to Historical Research and Bibliography. I, II. 3 hr. This course prescribed in fourth year for all history majors. Mr. Summers

277. The Literature of American History. I or II. 3 hr. Open to graduate students in history and to seniors majoring in history. Staff

290. Growth of American Thought Before 1865. II. 3 hr. For seniors and graduate students, or consent. Mr. Steel

291. Growth of American Thought Since 1865. II. 3 hr. For seniors and graduate students, or consent. Mr. Steel

Graduate Division

301, 302. Thesis. I, II. 2 or 3 hr. per sem. Staff

303, 304. Research. I, II. 6 hr. per sem. Staff

305, 306. Directed Topical Reading. I or II. 3-6 hr. per sem. Staff

333. Seminar in British History: Tudor Period. I or II. 3 hr. PR: Graduate standing. Mr. Levine

349, 350. Problems in Local and Regional History. I, II. 3 hr. per sem. Mr. Barns and Mr. Summers

351. Social Aspects of the Appalachian Frontier. I or II. 3 hr. PR: Graduate standing. Mr. Caruso

356. Seminar in American History. 1492-1789. I, II. 3 hr. Miss Krauskopf

357. Seminar in American History. 1763-1865. I, II. 3 hr. Mr. Steel

358. Seminar in American History, 1850-1898. I, II. 3 hr. Mr. Summers

359. Seminar in American History. 1890-Present. I, II. 3 hr. Mr. Bagby

360. Rise of Nationalism in Asia. I or II. 3 hr. Mr. Ennis

361. Contributions of Asia to Western Civilization. I or II. 3 hr. Mr. Ennis

384, 385. Problems in British Imperialism and World Politics. I, II. 3 hr. per sem. Staff

386. Imperial Germany, 1871-1918. I or II. 3 hr. Mr. Easton

387. The Weimar and Bonn Republics. I or II. 3 hr. Mr. Golay

389. Problems in Revolutionary Europe. 1763-1815. I or II. 3 hr. Mr. Easton

HOME ECONOMICS

Professor Nolan (Adviser) and Staff.

The degree of Bachelor of Arts with a major in Home Economics is offered by the College of Arts and Sciences. Courses for this program of study are provided by the College of Arts and Sciences and by the College of Agriculture, Forestry, and Home Economics. In order to qualify for this degree, a student must meet the general requirements for the A.B. degree as outlined on page 147. The general courses listed on page 198 are taught by the Home Economics faculty of the College of Agriculture, Forestry, and Home Economics and are approved for fulfillment of the requirements of a major in the College of Arts and Sciences.

The offerings in the Division of Home Economics are designed to fulfill a variety of educational needs. While the training is directed toward the development of professional home economists, the knowledge and skills acquired can be directly applied to the individual's home and family.

Vocational opportunities for home economists far outnumber the trained graduates available for jobs. Those who are employed work in a variety of positions—high school or college teachers, extension workers, dietitians, nursery school supervisors, commercial demonstrators, journalists, and radio and television programmers. Some find opportunities in retailing, interior decorating, or home planning centers. Others choose careers in research or social service.

A student desiring to obtain a high-school teaching certificate in the field of Home Economics should inform her adviser at the beginning of the first semester so that a proper program may be planned. For specific information in regard to certification for teaching, see the University bulletin *Teacher Training Programs—Requirements for Certification.*

SUGGESTED HOME ECONOMICS CURRICULUM

FIRST YEAR				SECOND YEAR			
First Sem.	*Hr.*	*Second Sem.*	*Hr.*	*First Sem.*	*Hr.*	*Second Sem.*	*Hr.*
English 1	3	English 2	3	Electives, Group 3*	3	Electives, Group 3*	3
Biol.*, Phys. Sci.* or Chem.**	4	Biol.,* Phys. Sci.* or Chem.**	4	Electives, Group 2*	3-4	Electives, Group 2*	3-4
Foreign language	3	Foreign language	3	Home Econ. 105 or 15*	2-4	Home Econ. 12, 17 or 23	2-3
Home Econ. 1, 2,† 3, or 4 (any two)	4	Home Econ. 1, 2,† 3, or 4 (two not taken 1st Sem.)	4	Group 1	3-4	Group 1	3-4
Elective (Music 10 or Art 30*)	2	Elective (Music 10 or Art 30*)	2	Foreign language	3	Foreign language	3
Phys. Ed.	2	Phys. Ed.	1	Phys. Ed.	1	Phys. Ed.	1
				Electives	2	Electives	2
	17		17		17-18		17-18

*The following notes apply to those who wish to qualify for a secondary teacher's certificate:
(a) Biology or Physical Science required.
(b) Music 10 and Art 30 or 130 required.
(c) Group 3—English or American literature required.
(d) Group 2—Social Science required.
(e) Home Econ. 15 required.

**Required of those planning to major in foods and/or nutrition.

†Students who exempt Home Econ. 2 by placement test will take Home Econ. 12.

THIRD YEAR				FOURTH YEAR			
First Sem.	*Hr.*	*Second Sem.*	*Hr.*	*First Sem.*	*Hr.*	*Second Sem.*	*Hr.*
Home Econ. 114	2	Home Econ. 106	3	Home Econ.		Home Econ.	
English 18*	3	Electives,		electives*	4-6	electives*	3-6
Home Econ.		Group 5*	3-4	Minor Field	3	Electives	13
electives*	3-5	Home Econ.		Electives	9		
Minor	3	electives	3-5				
Elective	2	Minor	3				
		Electives	1-4				
	16		15		16		16

Courses of Instruction

1. Elementary Nutrition. I, II. 3 hr. Essentials of adequate diet; application with particular reference to needs of college students. Miss Graf

   Section 2. I. 2 hr. Advanced section of Home Econ. 1 for those who qualify on the basis of placement test. Miss Graf

2. Elementary Clothing. I, II. 2 hr. Problems in selection and construction of clothing. For freshmen and others who do not pass placement test. Miss Franck

3. Art Applied to Personal Problems. I, II. 2 hr. Principles of design and color applied so as to help college students meet problems of daily living. Problems may include room arrangement, clothing, design, etc. Mrs. Kulman

4. Elementary Management. I, II. 2 hr. The application of management to the use of time, money, energy, and other sources to achieve individual goals. Staff

12. Intermediate Clothing. I, II. 3 hr. PR: Home Econ. 2 or exemption of Home Econ. 2 by placement test. Development of judgment in selection and skill in construction. Emphasis on pattern alterations and fittings. Garments constructed in woolen, synthetic and cotton fabrics. One child's garment included. Miss Franck

15. Food Selection and Preparation. I, II. 3 hr. PR: Home Econ. 1, Chem. 2 or Physical Sci. 2, or consent. (2 lec., 2 lab.). Basic food selection, care, and preparation. Emphasis is placed on the chemical and physical properties of foods and reactions which occur during processing. Mrs. Jones

17. Textiles. I, II. 3 hr. (2 lec., 1 lab.). Characteristics of textile fibers and fabrics studied in relation to their use in the home. Representative materials examined and studied in the laboratory. One field trip required. Miss Dietrich

21. Nutrition and Food for Nurses. I. 3 hr. Fundamental principles of human nutrition and of food preparation. Content of course is that given in "Teaching Dietetics to Student Nurses," by American Dietetic Association. Miss Graf

23. Present Day Housing. I, II. 2 hr. PR: Home Econ. 3 or consent. Factors considered in selecting a home, its furnishings and equipment for families of different economic levels. Special attention is given to low-cost housing. Laboratory practice in improving rooms, apartments and houses using material usually found in rural communities and small towns. Mrs. Kulman

101. Nutrition. I. 3 hr. PR: Home Econ. 15, Chem. 2 or Phys. Sci. 2 with consent. Two lec., 1 lab. Food needs as affected by such factors as age, sex and activity; nutritive value of common foods; planning of adequate diets at different cost levels. Miss Yearick

102. Clothing Selection. I. 2 hr. PR: Home Econ. 3 or consent. Two lec. Selection of clothing for whole family from viewpoint of design, color and economy. Clothing inventories and buying plans. Miss Franck

104. Nutrition and Home Management. II. 3 hr. Planned to meet the needs of social work majors. Offered 1962-63 and alternate years. (Not open to Home Economics students.) Staff

105. Planning and Serving Family Meals. I or II. 2 hr. A practical course in food selection, preparation, and service. Course is based on student needs and interests. (Not open to Home Economics majors.) Mrs. Jones

106. Child Development. I, II. 3 hr. PR: Psych. 1 or 3 or Educ. 105 or 106. 2 lec. Child from prenatal period to preadolescence. University Nursery School used for observing children. Two hours a week for observation and participation. Miss Brown and Mrs. Ayersman

113. House Decoration. II. 3 hr. (Not open to Home Economics students.) Designed primarily for students who are not majoring in Home Economics. 2 lec., 1 lab. Materials and furnishings that go into decorating and furnishing a home with emphasis on cost, buying, and reconditioning. Mrs. Kulman

114. Management of Family Living. I, II. 2 hr. Influence of home conditions on families and family members. In considering ways of meeting everyday problems of families an attempt will be made to apply findings of science and techniques of management in such a way to help families achieve satisfaction in living. Open only to non-majors. Mr. Taylor

115. Meal Planning, Preparation, and Service. I, II. 3 hr. PR: Home Econ. 15 or consent. 1 lec., 1 3 hr. lab. Selection and purchase of foods; planning, preparing, and serving meals with emphasis on time, energy, and money management. Mrs. Jones

116. Home Nursing. II. 2 hr. 1 lec., 2-hr. lab. Practices to promote family health and caring for minor illness. Offered in 1962-63 and alternate years. Staff

117. Textile Buying. II. 2 hr. PR: H.E. 17. Lecture and laboratory combined. Buying of textiles for all types of clothing and for household. At least one field trip required. Miss Dietrich

121. Nutrition Work with Children. II. 3 hr. PR: Home Econ. 106 or 106, 115 parallel. Problems involved in feeding children optimum diets. Opportunity for students to: (1) prepare noon meals for University Nursery School children; (2) observe a number of school-lunch programs in and near Morgantown. Miss Graf

123. Home Planning and Furnishing. I, II. 4 hr. PR: Home Econ. 23. 2 lec., 2 lab. Fundamentals of wise planning to meet family needs; understanding of house structure and home needs. Discussions on home decorating based on various income levels and suitability to various communities and families. Mrs. Kulman

124. Demonstration Techniques. I, II. 2 hr. PR: Minimum of 4 hr. in each of 4 areas of home economics or consent. Lecture demonstration as means of presenting home economics materials to groups. Development and presentation of demonstrations suitable for secondary schools and for use with adult groups. Staff

125. Food for Special Occasions. II. 2 hr. PR: Home Econ. 15 or consent. Unusual foods and unusual methods of preparing and serving everyday foods. Preparation, organization, and management involved in foods for social functions. Offered in 1963-64 and alternate years. Mrs. Jones

132. Clothing Techniques. II. 2 hr. Not open to home economics students. Techniques for simple garment construction, remodeling, alterations and repairs. Problems adapted to need of individual students. Especially planned for Arts and Sciences students and young homemakers. Miss Dietrich

133. Home Crafts. II. 2 hr. Experience in simple crafts, using such materials as leather, plastic, metals, paper, thread, and fabric for creation of useful and

beautiful objects. Equipment and materials used are those readily available in home, school, and camp situations. Mrs. Kulman

134. Principles of Home Management. I, II. 2 hr. An intermediate course in management as applied to the family and homemaking. Detailed consideration of family goals and resources. Staff

181. Problems in Nutrition. I, II. 1-4 hr. PR: Consent. Staff

182. Problems in Clothing Construction. I, II. 1-4 hr. PR: Consent. Staff

183. Problems in Related Art. I, II. 1-4 hr. PR: Consent. Staff

184. Problems in Home Management. I, II. 1-4 hr. PR: Consent. Staff

185. Problems in Foods. I, II. 1-4 hr. PR: Consent. Staff

186. Problems in Child Development. I, II. 1-4 hr. PR: Consent. Staff

187. Problems in Textiles. I, II. 1-4 hr. PR: Consent. Staff

201. Diet in Disease. II. 2 hr. PR: Home Econ. 101, Zool. 171. Adaptations of normal diet for disease whose prevention or treatment is largely influenced by diet. Offered in 1962-63 and alternate years. Miss Yearick

205. Experimental Cookery. II. 3 hr. PR: Home Econ. 15, Chem. 131. 1 hr. lec., 2 2-hr. lab. Utensils, ingredients, temperature, manipulation, and cooking methods as they effect quality of cooked products. Offered in 1962-63 and alternate years. Mrs. Jones

206. Observation and Participation in the Nursery School. II. 1-2 hr. PR: Home Econ. 106. Directed experience in working with children in a nursery-school situation. Laboratory and conference. Mrs. Ayersman

209. Evaluation in Home Economics. I. 3 hr. PR: 30 hr. of home economics, 7 hr. of Education. Experience in selecting, devising, and using evaluation devices for appraising student progress toward desired goals in home economics education. Offered in 1962-63 and alternate years. Miss Brown

211. Readings in Nutrition II. 1-4 hr. PR: Home Econ. 101. Review of current literature and of present research. Topics depend upon needs and interests of class members. Miss Yearick

212. Advanced Clothing Construction. II. 2 hr. PR: Home Econ. 233 or consent. Offers opportunity for creative expression and for understanding of pattern through handling of fabrics on dress form. Costumes are designed, draped, and constructed. Miss Franck

214. Family Economics. I, II. 2 hr. Management of family's money resources. Consideration of the economic problems of families, of planned spending and saving, and of the roles of the consumer. Open to non-majors. Staff

215. Food Preservation. I. 2 hr. PR: Home Econ. 15. (1 lec., 1 lab.). Fundamental principles involved and actual experience in various methods of food preservation. Offered in 1963-64 and alternate years. Mrs. Jones

217. Readings in Textiles. I. 2 hr. PR: Home Econ. 17. Review and discussion of current literature reporting recent research in the field. Miss Dietrich

221. Community Nutrition Problems. I. 2 hr. PR: Consent. 2-hr. lec., field work. Includes consideration of organization and agencies through which these problems may be solved. Staff

222. Tailoring. II. 3 hr. PR: Home Econ. 2, 17. Tailoring of suits and coats. Emphasis placed on professional techniques, advanced fitting and construction of garments. Second garment constructed by fast-method techniques. Miss Franck

233. Costume Design I. 2 hr. PR: Home Econ. 3, 12, 117. Techniques of figure and fashion drawing. Designing for individuals of various types and ages. Some history of costume included. Miss Franck

234. Home Management Laboratory. I, II. 3 hr. PR: Home Econ. 15, 106, 114; Home Econ. 115 recommended. Arranged. A residence course designed to provide opportunity to apply management in a realistic homemaking situation, to develop satisfying relationships in a family-like atmosphere, and to use information and skills learned in other courses. Staff

254. Household Equipment. II. 2 hr. PR: Senior standing. Selection, arrangement, use and care of equipment of various situations and for different income levels, Laboratory and discussion Staff

264. Family Development. I, II. 2 hr. PR: Home Econ. 114 or consent. A professional course designed to prepare students for work with families in their varying stages of development and different socio-economic levels. Involves intensive study of family relationships as affected by differing stages of family life cycle from beginning family through the aging couple. Lecture, discussion, and observation of families. Open to non-majors. Mr. Taylor

266. Needs of Adolescents. I. 3 hr. A study of adolescent needs as met by the home with contributions of other agencies such as church, school and youth groups. Physical, social and integrative needs will be considered from the standpoint of needs of all family members as well as the individual. Miss Brown

281. Problems in Nutrition. I, II. 1-4 hr. PR: Consent. Staff

282. Problems in Clothing. I, II. 1-4 hr. PR: Consent. Staff

283. Problems in Related Art. I, II. 1-4 hr. PR: Consent. Staff

284. Problems in Home Management. I, II. 1-4 hr. PR: Consent. Staff

285. Problems in Foods. I, II. 1-4 hr. PR: Consent. Staff

286. Problems in Child Development. I, II. 1-4 hr. PR: Consent. Staff

287. Problems in Textiles. I, II. 1-4 hr. PR: Consent. Staff

LIBRARY SCIENCE

Professor Reese; Instructors (part-time) Henning, Moyers, Munn, and Reynolds

Courses in undergraduate library science are designed to meet the needs of students preparing to qualify for State certification as teacher-librarians in public schools. A student who is a candidate for an A.B. degree with a major in this field must satisfy the requirements of the College of Arts and Sciences and have completed 24 hours of library science. If planning to serve as school librarian, students will be required to complete the minimum number of hours in education courses in order to meet certification standards.

Students wishing to enter other fields of library service should substitute other courses for the required education courses listed in the curriculum on page 202.

Certain courses, such as "Reference and Bibliography," will be valuable to any university student as an aid to the tools and methods of research; "Library Materials for Children" and "Selection of Books and Related Materials for Young People" will be helpful to prospective teachers.

Qualities essential to school librarianship are adaptability, understanding and appreciation of young people and their needs, a thorough knowledge of books, materials, and sources.

Students wishing to do graduate work in library science should plan their courses to give a broad general background. A strong major in the chosen field, supplemented by introductory courses in as many subject-matter fields as possible, will

provide a good background for graduate work. Additional hours of modern foreign language, preferably French or German, are desirable. A knowledge of typing is essential.

A graduate program in Library Science, leading to the Master's Degree, was authorized and was started with the summer session of 1958. For entrance requirements and courses of study, consult the *Announcements* of the Graduate School.

CURRICULUM FOR THE A.B. DEGREE WITH MAJOR IN LIBRARY SCIENCE

FIRST YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
English 1	3	English 2	3
Foreign lang.*	3	Laboratory Sci.	4
Laboratory Sci.	4	Foreign lang.*	3
Lib. Sci. 1	2	Electives	
Electives		Group 1 or 2	3-6
Group 1	3-4	Phys. Ed.	1
Phys. Ed.	1	Mil. or Air Sci. 2	2
Mil. or Air Sci. 1	2		
	16-18		17-18

SECOND YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
English 3 or 5	3	English 4 or 6	3
Foreign language	3	Foreign language	3
Social Sci. 1	4	English 21	3
Electives		Social Sci. 2	4
Group 1 or 2	3	Electives	
Speech 11	3	Group 1 or 2	3
Phys. Ed.	1	Phys. Ed.	1
Mil. or Air Sci. 3	2	Mil. or Air Sci. 4	2
	17-18		17-18

THIRD YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
Lib. Sci. 203	3	Lib. Sci. 101	3
Lib. Sci. 223	3	Lib. Sci. 205	3
Educ. 105	3	Lib. Sci. 225	3
Electives		Educ. 106	3
Group 3, Upper Div.	3-6	Art 130	3
Electives		Electives	
Group 4 or 5	3	Group 3 Upper Div.	3
	15-18		18

FOURTH YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
Lib. Sci. 207	3	Lib. Sci. 222	3
Lib. Sci. 230	3	Health Ed. 101	2
Educ. 114	3	Practice Teaching	8
Electives	9	Electives	6
	18		19

*Modern foreign language, preferably French or German. Students should have at least 12 hours. Additional hours are desirable for graduate study.

Courses of Instruction

Lower Division

1. Using Books and Libraries. I, II. 2 hr. Planned to give working knowledge of library facilities, particularly of the University Library. Basic reference materials are considered together with simple bibliography making. A general course useful to any student in the University and required for majors in library science. Staff

Upper Division

101. Reference and Bibliography. I. 3 hr. Basic reference books, dictionaries, encyclopedia, indexes, yearbook, and other reference materials are studied and evaluated, with practice in detailed bibliography making. Staff

203. Library Materials for Children. I, II, S. 3 hr. A survey of the development of children's literature with emphasis on modern books. Evaluation of the aids and standards for selection of books and materials in this field. Study and comparison of the work of illustrators of children's books and various editions of individual titles. Investigation of children's reading interests and practice in storytelling are included. Reading of books in various classes is emphasized. Discussions, reports and special reports. Intended primarily for teachers whose duties include the selection of books either for class or library use. (May not be offered for graduate credit by library science majors.) Staff

205. Selection of Books and Related Materials for Young People. II, S. 3 hr. A survey of adolescent literature and other library materials adapted to the needs of high school students. Critical evaluation of standard, classic and current books together with aid and criteria for selection. Reading interests and the problem of retarded and nonreader will be considered. Designed for the teacher who is interested in selection problems or for the school librarian. (May not be offered for graduate credit by library science majors.) Staff

207. School Library Organization and Administration. I, S. 3 hr. A study of the organization and administration of school libraries, including planning of rooms, equipment, routines and schedules. Attention is given to special phases of the work such as discipline, publicity and displays, reading, guidance, handling of audio-visual materials and the work of student assistants. Lectures, readings, discussions and special problems. Designed to meet the needs of the librarian and teacher-librarian. (May not be offered for graduate credit by library science majors.) Staff

221. Public and Regional Library Service. S. 3 hr. PR: Consent. Principles governing the administration of tax-supported public libraries and the development of larger units of service. Objectives, functions, control, finances, building and equipment, personnel, special services. Staff

222. Field Practice. I, II, S. 3 hr. Embodies techniques in various types of libraries. Designed to promote an understanding of total library programs and the interrelations of library methods and skills found in the different libraries. Offered after basic courses have been completed. Staff

223. Cataloging and Classification. I, S. 3 hr. Basic principles of cataloging and classification combined with practical experience in processing the various types of books and materials. Problems peculiar to the teacher-librarian will be considered. Staff

225. Books and Reading for Adults. II, S. 3 hr. Reading and evaluation of representative books in broad subject fields. Stress on both modern titles and the classics for the adult reader. Emphasis on book reviewing, both written and oral, with a study of book selection aids. Class discussions, problems, term reports. Staff

226. Literature of the Social Sciences. II, S. 3 hr. PR: Consent. An approach to the selection of books and materials in the social sciences. The whole library collection will be considered but the main emphasis will be on specialized materials, bibliographies, institutions and societies, periodicals, government documents, indexes, and other material not readily located through the card catalog. Subjects included will be history, geography, political science, sociology, social welfare, education, psychology, economics, business. Staff

228. Literature of Science and Technology. I or II,* S. 3 hr. PR: Consent. A course designed to give the student a good working knowledge of the vast and increasingly complex literature of science and technology. It is also designed to enable him to use a research laboratory with intelligence and efficiency. Staff

230. Library Resources for the School Curriculum. II. 3 hr. Broadened experiences in both library and outside resources that lend themselves to curriculum enrichment, including guidance, remedial reading, textbooks, community resources, all phases of audio visuals, etc. Presented to elementary and secondary teachers as well as librarians to help them give more effective service. Staff

232. Serials and Periodicals. II. 2 hr. PR: Lib. Sci. 1 or 101. Basic information concerning acquisition, organization, care and use of serials and periodical publications in libraries. Staff

*Alternately.

235. Library in the Elementary School. II. 2 hr. PR: Lib. Sci. 203. Organization and administration of library services for children in the elementary school including consideration of housing and equipment, selection and organization of books and other materials, instruction in the use of the library, student assistants, audio-visual materials, and publicity. Staff

Graduate Division

302. Administration of College and University Libraries. I or S.* 3 hr. Principles and problems involved in the administrative organization of the college library, including finance, public relations, departmental organization and services to students and faculty. Staff

304. Advanced Cataloging and Classification. II, S. 3 hr. PR: Lib. Sci. 223. A more detailed study of classification including both Dewey and Library of Congress classifications as they pertain to books and nonbook materials found in college, university, special library collections, and large public libraries. Staff

306. History of Books and Libraries. II, S. 3 hr. A survey course, including the development of writing, and history of writing materials, the development of the book from early manuscript form, history of printing, printers, book illustration, bindings, and the library and its development. Staff

308. Administration and Supervision of Public School Library Systems. I or II, S. 3 hr. PR: Lib. Sci. 207. Principles and problems involved in giving service to individual schools and school systems on the elementary and secondary school levels. It will include a study of standards, training, functions and duties of the teacher-librarian as well as the full-time librarian. Special attention will be devoted to the advantages of trained supervision on the national, regional, state and local levels. Staff

309. Seminar. I or II, S. 2 hr. (Max. credit 4 hr.). Required of all majors in library science. A course covering special problems in the library field, varying according to the group and its needs. Members of the University Library Staff and visiting librarians will participate. Staff

310. Special Topics. 1-3 hr. PR: Lib. Sci. 309. To give a thorough study of some phase of library science based on the needs and interest of the individual to be followed by an oral examination of a committee appointed prerequisite to the master's degree. Staff

*Alternately.

MATHEMATICS AND ASTRONOMY

Professors Stewart, Cunningham, Davis, Pierce, Veihsi, and Vest; Associate Professor Peters; Assistant Professors Cochran and Gould; Instructors Altizer, Carlin, Coover, Dosier, Easton, Gilbert, Godfrey, Hall, Heflin, Hennen, Loudin, Miller, and Strong.

A student must have a grade-point average of 2.0 or higher in mathematics courses taken in the lower division before he will be admitted to the upper division as a mathematics major.

Following is a suggested program for prospective majors in mathematics.

FIRST YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
English 1	3	English 2	3
Foreign language	3	Foreign language	3
Math. 3	3	Math. 5	4
Math. 4	3	Mil. or Air Sci. 2	2
Mil. or Air Sci. 1	2	Phys. Ed.	1
Phys. Ed.	1	Distribution Requirements	3-6
Distribution Requirements	3-6		
	16-18†		16-17

SECOND YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
Foreign language	3	Foreign language	3
Math. 107	4	Math. 108	4
Physics 111	5	Physics 112	5
Mil. or Air Sci. 3	2	Mil. or Air Sci. 4	2
Phys. Ed.	1	Phys. Ed.	1
Distribution Requirements	3-6	Distribution Requirements	3-6
	17-18		17-18

THIRD YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
Math. 240	3	Math. 235	3
Math. 246	3	Math. 243	3
Distribution Requirements	0-3	Distribution Requirements	0-3
Minor and electives	9	Minor and electives	9
	18		18

FOURTH YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
Math. 251	3	Math. 252	3
Minor and electives	15	Minor and electives	15
	18		18

†Men required to take both military science or air science and physical education should postpone taking science until the second or third semester. A distribution requirement may then be taken in the Freshman year.

Lower-division students who plan to become majors in the Department, who also wish to meet the requirements for teacher certification, should so inform their lower-division adviser, and plan their schedules very carefully in order to avoid loss of time.

The foreign language should be French, German, or Russian.

Mathematics majors must complete 18 hours of mathematics beyond calculus. The usual courses are Math. 235, 240, 243, 246, 251, and 252. The minor may be physics, or some other subject approved by the adviser.

Courses of Instruction

MATHEMATICS

The following two courses are offered to enable students to remove entrance conditions in mathematics. Each course meets three times per week throughout the school year. Neither course carries University credit, although each is considered equivalent to three hours per semester in calculating student course loads.

Pre-College

0. Elementary Algebra. I and II. ½ unit per sem. A two-semester course equivalent to first-year high school algebra. Staff

1. Geometry. I and II. ½ unit per sem. A two-semester integrated course covering the usual material of high school plane and solid geometry. Staff

Lower Division

2. Algebra. I, II. 3 hr. PR: 1 unit of algebra. Staff

3. College Algebra. I, II. 3 hr. PR: 1½ units of algebra and successful completion of entrance examinations, or Math. 2, and 1 unit of geometry. Staff

4. Plane Trigonometry. I, II. 3 hr. PR: 1½ units of algebra and successful completion of entrance examinations, or Math. 2 and 1 unit of geometry. Staff

5. Analytical Geometry. I, II. 4 hr. PR: Math. 3, 4, or successful completion of placement examinations in algebra and trigonometry. Staff

6. Arithmetic for Teachers. I, II. 3 hr. Staff

7. Solid Geometry. I, II. ½ unit. PR: Plane geometry. Staff

8. Elementary Mathematics. I, II. 3 hr. PR: 1 unit of algebra. For students planning to teach Commerce. Staff

21, 22. Introduction to Mathematics. I, II. 3 hr. per sem. PR: 1 unit of algebra. Reasoning, development of elementary mathematics, function and limit concepts, topics in modern mathematics, the nature of mathematics and its relation to modern civilization. Mr. Peters

Upper Division

107. Differential and Integral Calculus. I, II. 4 hr. PR: Math. 5. Staff

108. Differential and Integral Calculus. I, II. 4 hr. Continuation of Math. 107. Staff

220. Numerical Analysis. II. 3 hr. PR: Math. 108. The composition, propagation and generation of error. Matrices and linear equations. Nonlinear equations and systems. Proper values and vectors of a matrix polynominal. Trigonometric and exponential interpolation. Numerical integration and differentiation. The Monte Carlo Method. Mr. Cochran

232. Mathematical Statistics II. 3 hr. PR: Math. 108. Discrete and continuous variables; correlation, regression, sampling theory, normal, chi-square, t, and F distributions; significance tests; analysis of variance. Mr. Cochran

235. Foundations of Algebra and Analysis. II. 3 hr. PR: Math. 108 or consent. Development of the natural numbers, integers, rational, real and complex numbers from the axioms of Peano. Cardinal and ordinal arithmetic. The equivalence of the axiom of choice, Zeorn's Lemma and the well ordering theorem. The algebra of classes. Mr. Cunningham

238. Modern Geometry for Teachers. S. 3 hr. PR: Math. 108 or consent. For high school teachers. Extension of traditional Euclidean plane geometry. Geometry of points, lines, triangles, and circles; similarity, inversion, and polars. Mr. Cochran

240. Differential Equations. I, II. 3 hr. PR: Math. 108. First course. Types of ordinary differential equations of first or higher degree and of first or higher order. Solutions and applications. Not open to students with credit for Math. 253. Staff

242. Advanced Real Calculus. I. 3 hr. PR: Math. 108. This is a preparatory course for Math. 256. Fundamental principles of limits, derivatives, integrals and series. Mr. Vest

243. Projective Geometry. II. 3 hr. PR: Math. 246. Projective, affine, and metric geometries of the line, plane, and space; conics and quadrics. Mr. Davis

244. Theory of Equations. S. 3 hr. PR: Math. 108. Complex numbers, division, factorization and other properties of polynomials in a field. Theory of equations in the field of rational numbers; in the field of real numbers. Elimination, resultants, and symmetric functions. Algebraic extensions of a field. Algebraically closed fields. Ruler and compass construction. Mrs. Easton

245. Vector Analysis. I. 3 hr. PR: Math. 240 or 253. Vector definitions and operations, differentiation, operator del, integration, generalized coordinates, irrotational and solenoidal vectors, electrostatic fields, potentials. Staff

246. Introduction to Algebraic Theories. II. 3 hr. PR: Math. 108 or consent. Polynominals, elementary transformation on rectangular matrices, equivalence of forms and matrices, linear spaces, and matric polynomials; groups, rings and fields. Mr. Peters

247. Theory of Numbers. S. 3 hr. PR: Math. 108. Divisibility, distribution of prime, theory of congruences, theory of quadratic residues, arithmetical properties of the roots of unity. Diophantine equations, and the prime number theorem. Mr. Gould

248. History of Mathematics. S. 3 hr. PR: Math. 5. Ancient Near East arithmetic, Euclid's geometry. Algebras of Babylonians, of Cardano and Tartaglia, non-Euclidean geometry. Descarte's work, conditions of Newton and Leiznitz. Mrs. Easton

251. Advanced Calculus. I. 3 hr. PR: Math. 108. Partial differentiation. Euler's theorem, Taylor's series, Jacobians; maxima and minima, Lagrange's multipliers; multiple integrals; line and surface integrals. Staff

252. Advanced Calculus. II. 3 hr. PR: Math. 251. Continuation of Math. 251. Limits and indeterminate forms; infinite series; improper integrals; applications of uniform convergence; Gamma and Beta functions; Stirling's formula; Fourier series. Staff

253. Advanced Course in Applied Mathematics. I. 3 hr. PR: Math. 108. Ordinary differential equations with emphasis on linear equations; infinite series. Fourier series, solutions of ordinary differential equations by infinite series. Applications to engineering problems. Not open to students with credit for Math. 240. Staff

254. Advanced Course in Applied Mathematics. II. 3 hr. PR: Math. 253. Elliptic integrals, Gamma and Bessel functions, partial derivatives, differentiation under integral sign, partial differential equations, vectors, applications to vibrating strings, heat flow, electrical flow. Mr. Vest

256. Introduction to Complex Variables. II. 3 hr. PR: Math. 242 or 252. An introductory course intended primarily for students in engineering and physics. Elementary principles, conformal mapping, and applications. Mr. Vest

259. Introduction to the LaPlace Transform. II. 3 hr. PR: Math. 240 or 253. An introduction at the undergraduate level to the theory and applications of the LaPlace transform. The treatment is restricted to real variables to permit early introduction of the course into the student's curriculum. Mr. Vest

261, 262. Special Topics. S. 2-4 hr. PR: Math. 108 or consent. Primarily for teachers. Useful topics not covered in the regular required course. Content may vary with the needs of the student. Staff

263. Special Topics. II. 2-3 hr. PR: Math. 262 or consent. Sets; relations; axiomatization of a mathematical system; structure of Real Number System; algebraic expressions; and critical study of the foundations of Euclidean geometry. Mr. Peters

264, 265. Foundations of Algebra. S. 2 hr. PR: Differential and integral calculus. Not open to students with credit for Math. 246. Mr. Vest

266, 267. Foundations of Geometry. S. 2 hr. PR: Differential and integral calculus. Mr. Cunningham and Staff

268, 269. Probability and Statistics. S. 2 hr. PR: Differential and integral calculus. Staff

Graduate Division

308. Theory of Probability. I. 3 hr. PR: Math. 108. Fundamental theorems. Development of density and distribution functions in the discrete and continuous cases. Classical problems and solutions. Moments, characteristic functions, limit theorems. Applications. Mr. Stewart

309. Group Theory. II. 3 hr. PR: Math. 246 or consent. Order, index, coset, normal subgroup, factor group, homomorphism; direct product; fundamental theorem of Abelian groups; and Jordan-Holder theorem. Mr. Peters

311. Point-set Topology. I. 3 hr. PR: Math. 252. Transfinite cardinal numbers, well-ordered sets, transfinite ordinal numbers, closed and perfect sets, measurable point sets in Borel sense; applications to Riemann and Lebesgue integrals. Staff

312. Introduction to Combinational Topology. II. 3 hr. PR: Math. 252. Linear graphs, two-dimensional complexes and manifolds, n-dimensional complexes and manifolds, orientable manifolds. The fundamental group and certain unsolved problems. Staff

313. Advanced Differential Equations. II. 3 hr. PR: Math. 240, 252. Second-order linear equations, Riccati equations, complex variables. Series solutions. Equations of Fuchsian type, hypergeometric equation, confluence of singularities. Classical equations, applications. Mr. Vest

314. Tensor Analysis. II. 3 hr. PR: Math. 245, 252. Vector concept developed from standpoint of algebraic invariants, surface geometry, tensor operators, curvature tensor. Ricci and Bianchi identities, applications of tensors to physical phenomena. Mr. Stewart

315. Calculus of Variations. II. 3 hr. PR: Math. 240, 252. Maximum and minimum value of an integral, shortest distance, the brachistochrone problem, surfaces of revolution of minimum area, conditions for a relative minimum. Applications. Mr. Vest

320, 321. Special Functions. I, II. 3 hr. PR: Math. 240, 252. Operational techniques; generalized hypergeometric functions; classical polynomials of Bell, Hermite, Legendre, Noerlund, etc. Introduction to recent polynomials systems. Current research topics. Mr. Gould

331, 332. Theory of Partial Differential Equations. I, II. 6 hr. PR: Math. 240, 252, or equiv. Elementary concepts; Cauchy problems; the Cauchy-Kowalewski theorem; general existence theorems; associate surfaces; classication into elliptic, parabolic, and hyperbolic types; conditions required of coefficients for solvability; techniques for solution; distribution theory; and numerical methods. Mr. Vest

351, 352. Algebraic Geometry. I, II. 3 hr. per sem. PR: Math. 243, 246. Characteristic properties and representations of curves and surfaces, algebraic correspondences; linear systems; enumerative geometry. Mr. Cunningham

353. Linear Algebra. II. 3 hr. PR: Math. 246 or consent. Review of theory of groups and fields; linear vector spaces including the theory of duality; full linear group; bilinear and quadratic forms; and theory of isotropic and totally isotropic spaces. Mr. Peters

357. Fourier Series and Partial Differential Equations. I. 3 hr. PR: Math. 240 (or 253), 252. Introductory material, partial differential equations of physics, orthogonal sets; solving boundary value problems by Fourier series and integrals, uniqueness of solutions; Bessel functions, Legendre polynomials. Mr. Vest

358. Operational Methods in Partial Differential Equations. II. 3 hr. PR: Math. 240 (or 253), 252. Laplace transformation, properties and elementary applications; problems in partial differential equations, complex variable; problems in heat condition, mechanical vibrations, etc. Sturm-Liouville systems. Fourier transforms. Mr. Vest

360, 361. Differential Geometry and Theory of Surfaces. I, II. 3 hr. per sem. PR: Math. 240, 243. Metric properties of space curves and surfaces by differential methods. Parametric representation, curvature, torsion, trihedrons, geodesics, transformations, conformability, developability, ruled surfaces. Mr. Davis

362, 363. Introduction to Modern Algebra. I, II. 3 hr. per sem. PR: Math. 246 or consent. Review of concepts from set theory and the system of natural numbers, semi-groups; rings, integral domains and fields; extensions of rings and fields; elementary, factorization theory; groups with operators; modules and ideals; and lattices. Mr. Peters

364, 365. Theory of Functions of Complex Variables. I, II. 3 hr. per sem. PR: Math. 240, 252. Complex numbers; functions of a complex variable; fundamental theorems of Cauchy; conformal representation with applications; analytic continuation; calculus of residues; Gamma, Bessel, and elliptic functions. Mr. Vehse

366, 367. Higher Plane Curves. I, II. 3 hr. per sem. PR: Math. 241, 243. Algebraic plane curves. General theory of curves, singularities, relationships, associated curves; detailed study of curves of third and fourth order. Staff

368, 369. Recent Advances in the Foundations of Geometry. I, II. 3 hr. per sem. PR: Consent. Mr. Pierce

372, 373. Line Complexes and Cremona Transformations. I, II. 3 hr. per sem. PR: Math. 243. Line coordinates, null system, systems of complexes, congruences, surface theory, and mapping. Plane Cremona transformations, introduction to general space theory, opportunities for research. Mr. Davis

374, 375. Algebraic Surfaces. I, II. 3 hr. per sem. PR: Math. 243. Mapping of quadric, cubic, quartic, and quintic surfaces on the plane; space transformations, equivalence, postulation; curves on a surface, adjoint systems, invariants. Mr. Davis

376, 377. Theory of Functions of a Real Variable. I, II. 3 hr. per sem. PR: Math. 235, 246, and 252. Review of elementary point set concepts. Necessary and sufficient conditions under which operations of previous analytical subjects are valid. Different theories of integration. Mr. Cunningham

380. Thesis. I, II. 3 hr. Staff

ASTRONOMY

106. Descriptive Astronomy. II. 3 hr. Mr. Cochran

216. Astronomy for Teachers. S. 3 hr. Introduction to astronomy with special emphasis on the needs of physical science teachers and science club directors. Not open to students with credit for Math. 106. Mr. Cochran

255. Mathematical Astronomy. II. 3 hr. PR: Math. 106, 240. Development of the implications of Kepler's Laws and Newton's Law of Gravitation. Mr. Cochran

NURSING EDUCATION

This program has not been available to students since June 1, 1961. A program leading to a B.S. degree in Nursing is offered in the School of Nursing. Information regarding this program may be obtained by writing to: Dean, School of Nursing, West Virginia University, Morgantown, W. Va.

A student who enrolled in the Nursing Education program of the College of Arts and Sciences prior to June 1, 1961, must complete all requirements for the degree by June, 1968.

Nursing Education has as its main objectives the preparation of students to meet the challenges presented in the varied, important, and increasing activities in the expanding field of health; the development in students with a wide interest in social and professional problems, with an ability to share in their solution for increased and enriched professional usefulness; and the preparation of students for democratic leadership and creative living in professional nursing and in the civil and social activities of their communities.

Pre-Nursing Curriculum

Students interested in professional nursing as a career and who plan to enter a collegiate school of nursing may take one, two, or more years of general college work as given on page 155.

Bachelor of Science in Nursing Education

Admission Requirements: Applicants for admission to the Department of Nursing Education must: (1) meet requirements for admission to the College of Arts and Sciences; (2) be graduated from a state-accredited school of nursing; (3) be registered in one state or hold a temporary permit pending registration; (4) have experience in institutional, public health, or private-duty nursing; and (5) may be a senior student in a School of Nursing, selected by the School of Nursing and approved by the Department of Nursing Education and the College of Arts and Sciences.

Advanced Standing: Graduates of accredited schools of nursing may matriculate for this degree with advanced standing. Advanced standing may be granted for the following: (1) Basic nursing program in an accredited school of nursing. Each student's record will be evaluated individually and advanced standing given according to the content and quality of classroom and clinical instruction. An official transcript of the school of nursing record must be sent to the Registrar. Students who desire to matriculate with advanced standing should request a School of Nursing transcript form when they apply for admission. Thirty semester hours represent the maximum advanced standing allowed for a satisfactory basic diploma program in a hospital school of nursing. (2) Military credit—basic, four (Phys. Ed.) and advanced, six nonduplicate semester hours may be allowed for military service in World War II and Korea upon presentation of separation papers to the Registrar. (3) Credit for required courses completed with C or above grade in other accredited colleges or universities may be accepted for credit. Official transcript of records of work must be sent to the University Registrar by other colleges, universities, or schools of nursing.

Program Requirements: Candidates for the degree of Bachelor of Science in Nursing Education are required to satisfactorily complete at least 128 credit hours of which 124 hours must be established in subjects exclusive of credits earned in required Physical Education, required Military or Air Science, and English 0. The Nursing Education major includes at least 24 semester hours of professional or allied professional courses, 54 semester hours of general academic, scientific, and social subjects; a total of 58 semester hours of lower-division courses, including advanced standing credits in the basic nursing program; a total of 58 semester hours of upper-division courses, including the 24 hours required for the major, the 9 hours required for the minor, and the electives necessary to total 128 semester hours required for a Bachelor of Science Degree. With departmental approval, certain courses in education, sociology, social work, or psychology may be counted toward the major.

REQUIRED COURSES

1. *General Courses Required*:

English Composition 1 and 2	6 hr.
English (any upper-division courses)	6 hr.
Foreign Language (any one foreign language)*	12 hr.
Science (any one Physical or Biological laboratory science)	8 hr.
Sociology 102 or 1 (and any other upper-division course)	6 hr.
Psychology 1 or 3 (and any other upper-division course)	6 hr.
History (or Humanities 1 and 2—8 hr.)	6 hr.
Physical Education	4 hr.

*Or two units of entrance and six hours in the same language at the sophomore level.

2. *Professional Courses Required*:

101—Introduction to Nursing Education—or 102—Principles and Methods of Teaching Nursing	3 hr.
103—Trends in Nursing	3 hr.
104—Ward Administration and Teaching	3 hr.
107—Guidance in Nursing—or 117—Interpersonal Relations Applied to Nursing	3 hr.
108—The Nurse and Community Relationships	3 hr.
113—Legislation and Jurisprudence Affecting Nursing	3 hr.
Electives in Nursing Education or closely allied subjects	6 hr.
	24 hr.

3. *Major in Nursing Education*:

The non-specialized program leading to the degree of Bachelor of Science in Nursing Education was established to provide an opportunity for more thorough preparation of qualified graduate nurses to administer and supervise nursing services in a hospital unit. Such a program is fundamental to the understanding of administration, teaching and supervision, and serves as a basis for future graduate study, including clinical specialties. The major program offered at present is "Administration and Teaching in a Hospital Unit."

Courses of Instruction

Upper Division

101. Introduction to Nursing Education. I, II. 3 hr. PR: Psychology and consent. An orientation course designed as an introduction to the philosophy, basic principles, methods and organization underlying all fields of nursing, with emphasis upon teaching, supervision, and administration in schools of nursing. Staff

102. Principles and Methods of Teaching Nursing. II. 3 hr. PR: Nurs. Educ. 104, consent. A study of basic principles and methods of teaching from the standpoint of nursing education, with emphasis on teaching of nursing, planning, construction, and evaluation of units of work and instruction. Staff

103. Trends in Nursing. I, II. 3 hr. PR: Consent. A prologue to the future in the study of rapid professional and social changes, of recent developments, of new perspectives, and of current problems in the struggle to achieve professional maturity in all fields of nursing, and of allied professions in their relation to the nurse, to professional organizations, and progress. Staff

104. Ward Administration and Teaching. I, II, S. 3 hr. PR: Consent. A study of the basic principles underlying good ward administration; effective supervision; efficient bedside and ward teaching; and the total patient care in the maintenance of high-quality nursing service. Evaluation of staff and student's competencies as applied to good nursing care. Discussion of the head nurse's responsibility for personal growth and development, and for civic and social obligations as a professional citizen and nurse in the community. Staff

106. Historical Foundations of Nursing. II. 3 hr. A historical study and review of the origin, aims, and growth of nursing. Special emphasis on source material and its value as a basis for growth and development in the professional, educational, national, and international aspects of nursing and other healing arts. Staff

107. Guidance in Nursing. I, II. 3 hr. A study of guidance principles and procedures applied to the needs and problems confronting students and graduate nurses in hospitals, other health agencies, and schools of nursing. Staff

108. The Nurse and Community Relations. I, II. 3 hr. Designed to meet the challenge of today. To increase professional and social usefulness by playing well the nurse's role on the health team wherever it may function, in homes, in institutions, agencies, or in the community. Staff

110. Evaluation in Nursing Education. II. 3 hr. PR: Nurs. Educ. 101 or 102, psychology, and consent. Basic concepts and philosophy of the evaluation of learning, and the central aim of education in a democratic society. Analysis and intrepetation of techniques and tools of evaluation with emphasis on methods of teaching appropriate to the achievements of desired objectives, and the evaluation of teaching. Staff

111. Personnel Policies and Practices. I. 3 hr. PR: Consent. A critical study of the evaluation, formulation, and implementation of personnel policies and practices as related to democratic administration, economic security, and quality nursing care. Staff

112. Nursing Procedures and Routines. II. 3 hr. PR: Consent. A critical study of nursing procedures and routines already established to find ways to advance, to reinforce, and to keep abreast of new procedures. Emphasis on effective means of evaluation, construction, and administration of nursing procedures and routines. Staff

113. Legislation and Jurisprudence Affecting Nursing. I, II. 3 hr. A survey of current legislation affecting nursing, including the State Board of Nurse Examiners and other state and federal legislation relating to nursing and nursing education. A critical study of jurisprudence and its legal implications for the nurse as a member of the nursing profession and as a citizen. Staff

114. New Developments in Nursing Care. I, II, S. 1-3 hr. PR: Consent. Designed around the general theme of improving basic nursing care in such areas as teaching, techniques, curriculum planning, social and health integration, and counseling and guidance technique effective in nursing. Staff

115. Problems in Nursing. S. 1-3 hr. PR: Consent. This course is planned to meet needs and interests of nurses active in public health, industrial, and institutional nursing. Staff

117. Interpersonal Relations Applied to Nursing. I, II, S. 3 hr. PR: Consent. Designed to provide a better understanding of the dynamics of human behavior and basic principles underlying personality development in order to better understand self and others and gain increased skill in interpersonal relationships with patients, co-workers, and people in general. Staff

200. In-Service Education in Nursing. I, II, S. 3 hr. PR: Consent. A study of the philosophy and nature of various in-service programs, and ways and means of promoting continued professional development. Staff

216. Special Topics. 1-3 hr. PR: 10 hr. in Nurs. Educ., consent. Designed to provide material for work conferences or formal class in topics such as: interpersonal and public relations; supervision and teaching in nursing for hospital, public health, and industrial groups; rehabilitation; long-term chronic illness; communication competency; and other topics to meet current and critical needs of professional nurses, their patients, and community. Staff

PHILOSOPHY AND PSYCHOLOGY

Professors Curtis and Cresswell; Associate Professors Carruth, Cross, Dana, Minor, Rankin and Shafer; Assistant Professors Decker, Ferguson, and Thomas; Instructors Cole, Harless, and Hughes.

PHILOSOPHY

Philosophy has two main functions: (1) critical analysis of basic concepts, ideas, ideals, and beliefs; (2) organization of knowledge, and the development of patterns of tested belief for guidance of individual and institutional conduct.

Courses in philosophy are especially useful: (1) as a valuable background for policy-making positions in government, business, schools, and church; (2) as a preparation for work in the field of religion; (3) as an indispensable foundation for graduate training leading to teaching and research in philosophy; (4) as a general education providing condition for the organization of knowledge and a clearer recognition of values.

PROGRAM FOR PHILOSOPHY MAJORS

FIRST YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
Philos. 4	3	Art, Lib. Sci., or Speech	3
English 1	3	English 2	3
Foreign language	3	Foreign language	3
Laboratory Sci.	4	Laboratory Sci.	4
Phys. Ed.	1	Phys. Ed.	1
Mil. or Air Sci.	1 2	Mil. or Air Sci.	2 2
	16		16

SECOND YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
Humanities 1	4	Philos. 108 or 113	3
Philos. 106 or 107	3	Humanities 2	4
Foreign language	3	Foreign language	3
Econ., Pol. Sci. or Soc. Sci.	3-4	Econ., Pol. Sci. or Soc. Sci.	3-4
Literature or Math.	3	Literature or Math.	3
Mil. or Air Sci.	3 2	Mil. or Air Sci.	4 2
Phys. Ed. (W)	1	Phys. Ed. (W)	1
	17-19		17-19

THIRD YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
Psych. 1	3	Minor Subject	3
Philosophy Elective	3	Philosophy Electives	6
Minor Subject	3	Upper-Division Electives*	6-9
Upper-Division Electives*	6-9		
	15-18		15-18

FOURTH YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
Philosophy Electives	6	Philosophy Electives	6
Minor Subject	3	Minor Subject	3
Upper-Division Electives*	6-9	Upper-Division Electives*	6-9
	15-18		15-18

At least 6 hr. of work are to be chosen from each of the groups below:
a) Philos. 106, 112, 113, 205, 208, 210.
b) Philos. 107, 108, 114, 115, 118, 221.

*The following courses are highly recommended as cognate electives. A maximum of six hours from this list may be counted toward the major, with the adviser's consent, provided that at least 18 hours of philosophy courses are taken within the department: Econ. 210, 222; English 225; Hist. 276, 290, 291; Pol. Sci. 170, 171, 272, 273, 274.

PSYCHOLOGY

Courses in psychology are designed for one or more of the following ends: to promote a better understanding of human nature and behavior; to lay a foundation for graduate professional training; and to inculcate useful skills of psychological technology.

See page 214 for the program for Psychology majors.

PROGRAM FOR PSYCHOLOGY MAJORS

FIRST YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
English 1	3	English 2	3
Foreign language	3	Foreign language	3
Psych. 3	4	Psych. 4	4
Humanities 1	4	Humanities 2	4
Phys. Ed.	1	Phys. Ed.	1
Mil. or Air Sci. 1	2	Mil. or Air Sci. 2	2
	15-17		15-17

SECOND YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
Foreign language	3	Foreign language	3
Biol. 1 or Zool. 1	4	Biol. 2 or Zool. 2	2
Psych. 103	3	Psych. 104	3
Mil. or Air Sci. 3	2	Mil. or Air Sci. 4	2
Phys. Ed. (W)	1	Phys. Ed. (W)	1
Electives Group 2	3-4	Electives, Group 2	3-4
Literature or Math.	3	Literature or Math.	3
	17-19		17-19

THIRD YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
Psychology Electives	6	Psychology 130	3
Speech 11	3	Psychology Elective	3
Minor Subject	3	Minor Subject	3
Upper-Division Electives	3-6	Philos. 4 or 104	3
		Zool. 171	4
	15-18		16

FOURTH YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
Psychology Electives	6	Psychology Electives	6
Minor Subject	3	Minor Subject	3
Upper-Division Electives	6-9	Upper-Division Electives	6-9
	15-18		15-18

Courses of Instruction

PHILOSOPHY

Lower Division

4. Introduction to Philosophy. I, II. 3 hr. Study of living issues in the field of philosophy: (1) philosophic development of scientific methods for gaining knowledge; (2) fundamental moral, aesthetic, and religious values for guidance in wise use of knowledge. Mr. Minor

Upper Division

104. Principles of Philosophy. I, II. 3 hr. An inquiry into the meaning and reliability of some of our fundamental beliefs. A first course in philosophy, primarily for juniors and seniors. (Not for those who have credit for Philos. 4.) Mr. Cresswell

106. Logic. I. 3 hr. PR: Philos. 4 or 104. An examination of formal reasoning and scientific methods as means for attaining reliable knowledge. Mr. Cresswell

107. Personal Ethics. I. 3 hr. PR: Philos. 4 or 104. A search for the meaning and nature of right and wrong, the good and the bad in human conduct: (1) nihilism, the denial of ethics; (2) traditional theories of ethics; (3) recent research. Mr. Minor

108. Social Ethics. II. 3 hr. PR: Philos. 4 or 104. Critical analysis of conflicting social policies operating in family, educational, religious, economic, and political institutions in the interest of developing consistent principles for guidance of all institutions. Mr. Minor

112. History of Ancient and Medieval Philosophy. I. 3 hr. PR: Philos. 4 or 104. The history of philosophy brings together in connected form the ideals prized by the several periods in Western civilization which give meaning to

the religious, political, social and literary achievements of each period. The first semester course ends with the 6th century. Mr. Cresswell

113. History of Modern Philosophy. II. 3 hr. PR: Philos. 4 or 104. Continuation of Philosophy 112, through the 19th century. Mr. Cresswell

114. Contemporary Philosophy. I. 3 hr. PR: Philos. 4 or 104. Critical study of existentialism and operationalism as systems for the guidance of man. Offered in 1962-63 and alternate years. Mr. Minor

115. Contemporary Philosophy. II. 3 hr. PR: Philos. 4 or 104. Critical study of dialectical materialism and democracy as systems for the guidance of man. Offered in 1962-63 and alternate years. Mr. Minor

118. Philosophy of Art. I. 3 hr. PR: Philos. 4 or 104. Study of aesthetics which examines the meaning and nature of art and beauty. Critical analysis of principles to guide the development of aesthetic perception, form, expression, and use in fine, industrial, and professional arts. Offered in 1963-64 and alternate years. Mr. Minor

205. Oriental Religions and Philosophies. I. 3 hr. PR: Two courses in philosophy, or consent. An account of the religions of India, China, and Islam with their supporting philosophies; and the influence of the major Oriental world views on the Western world. Mr. Cresswell

208. Philosophy of Religion. I or II. 3 hr. PR: Two courses in philosophy. An attempt to discover the logically defensible foundations of religion. Mr. Cresswell

210. Philosophy of Science. II. 3 hr. PR: Philos. 4 or 104. An examination of the methods, presuppositions and concepts of modern science. For students interested in the influences of science on contemporary thought and society. Mr. Cresswell

217. Metaphysics. I or II. 3 hr. PR: Philos. 4 or 104, 112 or 113. Study of a selected system of philosophy. Staff

221. Axiology. II. 3 hr. PR: Philos. 4 or 104 and 107 or consent. Study of the origin, nature, and growth of value as the basis of intelligent development of normative disciplines including the applied sciences, law, art, religion. Offered in 1963-64 and alternate years. Mr. Minor

PSYCHOLOGY

Lower Division

1. Introduction to Psychology. I, II. 3 hr. Principles of general psychology for non-majors. (Not for those who have credit for Psych. 3 and 4). Staff

3, 4. General Psychology. I, II. 4 hr. Open to freshmen. 3 hr. lect., 2 hr. lab. a week. Fundamentals of general psychology for majors or those using psychology to satisfy science requirement. Staff

20. Psychology of Personal Efficiency. I, II. 1 hr. For students whose scholastic achievement is below capacity. Diagnostic and remedial practice in areas which hamper personal or academic efficiency. For freshmen and sophomores; others by consent. Staff

Upper Division

103, 104. Experimental Psychology. I, II. 3 hr. per sem. PR: Psych. 3 and 4 or consent. Required of majors. Principles of general experimental psychology surveyed at the intermediate level. Staff

110. Applied Psychology. II. 3 hr. PR: Psych. 1 or 3 and 4. Applications of psychology in fields of law, medicine, education, and business. Mr. Decker

115. Psychology in Industry. II. 3 hr. PR: Psych. 1, or 3 and 4. Job training, leadership training, motivation and morale, human relations, safety, industry and society. Mr. Curtis and Mr. Decker

116. Social Psychology. I. 3 hr. PR: Psych. 1, or 3 and 4. A study of the social factors which determine human behavior. The relationship of class, race, culture, social structure and other group phenomena to individual behavior. Other topics include: attitudes, public opinion, propaganda, mass media of information and national character. Mr. Rankin

122. Developmental Psychology. I. 3 hr. PR: Psych. 1, or 3 and 4. Growth trends in child behavior, including development in the physical, intellectual, emotional, social, and personality areas. Mr. Carruth

125. Mental Hygiene. I or II. 3 hr. Man's personality and needs and emotions as they relate to effective living in a modern world. Emphasis on those factors which lead to healthy psychological adjustment. Staff

130. Statistical Methods in Psychology. I. 3 hr. PR: Psych. 1 or 3 and 4. Analysis and interpretation of psychological data. Mr. Thomas

201. Physiological Psychology. I or II. 3 hr. PR: Psych. 103, 104 and Zool. 171 or equiv. The organic basis for psychological activities such as perception, emotion, motivation, and learning. Mr. Shafer

205. Individual Differences. II. 2 hr. PR: One course in psychology. Nature and extent of the differences among individuals in psychological traits such as intelligence and personality, as influenced by heredity, schooling, age, sex, and culture. Primarily for students in psychology and education. Mr. Cross

206. Learning and Motivation. I or II. 3 hr. PR: Psych. 103, 104 or equiv. Survey of experimental data in the area of learning and motivation. Special emphasis on contemporary learning theory. Mr. Shafer

214. Job Analysis. I or II. 3 hr. PR: Psych. 244 or M.E. 140. Instruction and supervised practice in preparation and use of job analyses. For students of psychology, engineering, management, or rehabilitation counseling. Mr. Cross

216. Attitudes and Propaganda. II. 3 hr. PR: Psych. 1 or 3 and 4, or consent. Includes: the nature of attitudes and opinions, attitude measurement, opinion changing, propaganda use and analysis, the social psychology of mass media, democratic values and public opinion. Designed to meet the needs of students from a variety of fields as well as psychology—especially sociology, political science, and journalism. Mr. Rankin

218. Psychology of Personality. I or II. 3 hr. PR: Two courses in psychology, or consent. Critical consideration of major theories of personality, including Freudian, neo-Freudian, learning theory, and trait theory. The basis and logic of personality theorizing will also be stressed. Mr. Rankin

225. Group Psychometric Testing. I. 3 hr. PR: Psych. 1, or 3 and 4, and 130. Theory underlying the construction of group tests of intelligence, aptitudes, interests, personality, and attitudes. Practice in administering, scoring, and interpreting them. Mr. Cross

226. Advanced Experimental Psychology. II. 3 hr. PR: Psych. 103, 104, 130. Lectures and laboratory. Design of psychological experiments; psychophysics of audition and vision. Mr. Shafer

229. Abnormal Psychology. II. 3 hr. PR: Psych. 1, or 3 and 4. A consideration of the major behavior disorders and the various psychological, surgical, chemical, and medical treatments thereof. Field trip to mental hospital and demonstrations. Mr. Ferguson

233. Problem Children. II. 3 hr. PR: Child or educational psychology. Study of children who present psychological problems because of: (1) exceptional mental retardation or advancement; (2) organic disabilities having behavior consequences, such as cerebral palsy or deafness; (3) disorders of conduct associated with atypical personality functioning. Of special interest to those who regularly deal with children as teachers, nurses, etc. Staff

236. Psychology of Adjustment. I. 3 hr. PR: Psych. 1, or 3 and 4, or consent. Dynamic principles of human personality adjustment. Staff

238. Introduction to Clinical Psychology. I or II. 3 hr. PR: Psych. 218, 236, or consent. The contribution of clinical psychology to understanding people. Foundation for advanced courses in clinical methods and skills. Of interest to advanced undergraduates and graduates in education, guidance, personnel, and social work as well as professionally-oriented students in psychology. Mr. Dana

240. History of Psychology. II. 3 hr. PR: Psych. 1, or 3 and 4. Traces the development of the science and concepts of psychology from their origin in philosophy, physiology, and medicine up to the modern era. Mr. Curtis

242. Advanced Social Psychology. I. 3 hr. PR: Psych. 116 or consent. A consideration of contemporary theory and practice in social psychology. Mr. Rankin

244. Personnel Psychology. I, II. 3 hr. PR: Psych. 1, or 3 and 4, and a course in business, psychological, or engineering statistics. Application of psychological principles and techniques for selecting personnel, evaluating performance, analyzing jobs and workers. Mr. Decker

245, 246. Seminar. I, II. 1 or 2 hr. Critical study of selected topics. Staff

260. Statistical Methods in Psychology. II. 3 hr. PR: Psych. 130 or equiv. Sampling theory, probability, further parametric and non-parametric statistics. Required for Master's Degree. Mr. Thomas

270. Group Dynamics. (Same as Sociol. 270). I or II. 3 hr. PR: Introductory course in psychology or sociology, or permission. An interdepartmental course, combining psychological and sociological approaches, in which the dynamics of groups in operation are considered. The following subjects will be treated: leadership, informal communication and group pressures, the relation of group aims to group organization, and the effect of the group on personality. Attention is given to recent researches and to practical applications. Mr. Rankin and Mr. Silberstein

Graduate Division

301, 302. Social Problems in Research. I, II. 1-3 hr. per sem. Staff

303, 304. Thesis. I, II. 2-3 hr. per sem. Staff

305, 306. Directed Study. I, II. 1-3 hr. Directed reading and research in special areas. Staff

310. Projective Techniques. I or II. 3 hr. PR: Psych. 236, 324, and consent. Survey of the projective techniques used in psychodiagnostics, including the Thematic Apperception Test and the Rorschach Test. Special emphasis will be given the Rorschach Test. Mr. Dana

311. Practicum in Projective Techniques. I or II. 1-3 hr. PR: Psych. 310 or equiv. Supervised practice in scoring and interpretation of the Rorschach Test and the Thematic Apperception Test. Mr. Dana

314. Practicum in Industrial Interviewing. I. 3 hr. PR: Psych. 244 or 115. Includes a survey of literature concerned with industrial interviewing, a review of personal history data found to be significant in industrial selection, and intensive study of interview techniques, practice and recorded interviews, by the student with critiques by the instructor. Mr. Decker

316. Counseling and Psychotherapy. I or II. 3 hr. PR: Psych. 218, 229, or equiv. Principles underlying individual and group psychotherapy. Mr. Ferguson

317. Practicum in Counseling and Psychotherapy. I or II. 1-3 hr. PR: Psych. 316 or equiv. Supervised experience in psychotherapeutic techniques used by the psychologist in a clinic setting. Mr. Ferguson

324. Individual Intelligence Testing. II. 4 hr. PR: Psych. 122 and 225, or Educ. 114 and 375, or consent. Theory and practice in Binet, Wechsler, and other individual tests of cognitive functioning. Mr. Ferguson

329. Behavior Pathology. II. 3 hr. PR: Psych. 218, 229, or consent. Advanced study of theories and evaluation of accumulated evidence concerning the etiology and dynamics of severe behavior pathology. Recommended prior to or concurrent with Psych. 310. Mr. Carruth

330. Systems of Psychology. II. 3 hr. PR: Psych. 1, 3 and 4, and one course in philosophy. Staff

331. Theory Construction. II. 3 hr. Problems and techniques of organizing the data of psychology; philosophical background, problems of definition, logical structures and techniques employed. Staff

338, 339. Clinical Psychology. I, II. 1-3 hr. PR: Psych. 324 and consent. Supervised practice in use of psychological techniques in a clinic setting. Mental testing, interviewing parents, personality diagnosis, test interpretation and reports, play techniques with children, case presentations at staff meetings. Emphasis is on the multi-discipline approach at the University Counseling Center. Mr. Carruth

345, 346, 347, 348. Seminar. I, II. 1 or 2 hr. Critical study of selected topics. Staff

350, 351. Practicum in Student-Personnel Psychology. I, II. 1-3 hr. PR: Psych. 236 or consent. Diagnostic and remedial techniques for dealing with reading and work-study-skills efficiency, and personal-social-emotional adjustment. Mr. Cross

352. Practicum in Vocational Appraisal. I, II. 1-3 hr. PR: Consent. Principles and procedures in appraising educational and vocational fitness. Supervised practice in testing and counseling college students presenting educational and vocational problems. Mr. Cross

360. Analysis of Variance. I. 3 hr. PR: Psych. 130, 260, or consent. A discussion of tests of homogeneity of variance, parametric and non-parametric analysis of variance, and analysis of covariance. Implications of these techniques for experimental design will be considered. Mr. Thomas

361. Correlation Analysis. II. 2 hr. PR: Psych. 130. A study of the correlational techniques used in research and development in psychology with practice in the application of the methods to typical problems. The methods studied will include product-moment, biserial, tetrachoric, partial, multiple, and others. Mr. Decker

PHYSICS

Professors Thomas and Ford; Associate Professors Jefimenko, Rexroad and Williamson; Assistant Professors Pavlovic and Vehse; Instructors Farr and Wilson; Instructor (part-time) Temple.

Various courses offered in Physics are designed to meet the needs of students in the Colleges of Education, Engineering, Arts and Sciences, Agriculture, and the School of Pharmacy.

SUGGESTED CURRICULUM FOR A.B. DEGREE IN PHYSICS

The Bachelor of Arts degree is intended for those students who wish a foundation in physics but with a wider choice of elective subjects than is possible for those wishing to enter the field at a professional level. A total of 124 hours exclusive of Military or Air Science, Physical Education, and English 0 are required. At least two of the following are required: Physics 225-226, 231-232, 233-234, and at least two of the accompanying laboratories.

FIRST YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
Mil. or Air Sci. 1	2	Mil. or Air Sci. 2	2
Phys. Ed. 1	1	Phys. Ed. 2	1
English 1	3	English 2	3
Math. 3	3	Math. 5	4
Elective	3	Elective	3
Elective	3	Language 2	3
†Language 1	3		
	18		16

SECOND YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
Mil. or Air Sci. 3	2	Mil. or Air Sci. 4	2
Physics 111	5	Physics 112	5
Math. 107	4	Math. 108	4
Chem. 1	4	Chem. 2	4
Language 3	3	Language 4	3
	18		18

THIRD YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
Math. 200	3	Elective	3
Physics 100	3	Physics 100	3
Physics 200	3	Physics 200	3
Phys. 200 Lab.	1	Phys. 200 Lab.	1
Elective	3	Elective	3
Elective	3	Elective	3
	16		16

FOURTH YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
Physics 200	3	Physics 200	3
Physics 200 Lab.	1	Physics 200 Lab.	1
Elective	3	Elective	3
Elective	3	Elective	3
Elective	3	Elective	3
Elective	3	Elective	3
	16		16

†If Math. 4 (Trigonometry) is required, postpone language one semester. German, Russian, and French are recommended.

SUGGESTED CURRICULUM FOR B.S. DEGREE IN PHYSICS

The Bachelor of Science degree is designed for those students who expect to prepare for graduate work or to enter physics as a profession upon completion of the bachelor's degree. A minimum of 139 credit hours is required for graduation.

The first two years of the curriculum for the B.S. degree are the same as for the A.B. degree on page 86.

The following are required: Physics 225-226, 231-232, 233-234 and two of the accompanying laboratories. At least 6 hours of a second language (German, Russian or French) are required, 9-12 hours are recommended.

THIRD YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
Math. 200	3	Math. 200	3
Physics 100	3	Physics 100	3
Physics 200	3	Physics 200	3
Physics 200	3	Physics 200	3
Phys. 200 Lab.	1	Phys. 200 Lab.	1
Phys. 200 Lab.	1	Phys. 200 Lab.	1
2nd Language 1	3	Language 2	3
	17		17

FOURTH YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
Physics 200	3	Physics 200	3
Physics 200	3	Physics 200	3
Elective	3	Elective	3
Elective	3	Elective	3
Elective	3	Elective	3
Language 3 or Elective	3	Language 4 or Elective	3
	18		18

Courses of Instruction

Lower Division

1. Introductory Physics. I. 4 hr. PR: Plane geometry and algebra. Required of all students whose curriculum calls for introductory physics. Mechanics, sound, heat. Staff

2. Introductory Physics. II. 4 hr. PR: Physics 1. Electricity, magnetism, and light. Staff

Upper Division

109, 110. A Problem Course in General Physics. I, II. 2 hr. per sem. Pre- or corequisite: Calculus. Open to students who have taken Introductory Physics or equivalent; not open to students who have taken General Physics. Mr. Wilson

111. General Physics. I, II. 5 hr. Pre- or corequisite: Calculus. Required of all students who major in mathematics. Not open to students who have credit for Introductory Physics. Mechanics, sound, and heat. Staff

112. General Physics. I, II. 5 hr. Continuation of Physics 111. Not open to students who have credit for Introductory Physics. Light, electricity, and magnetism. Staff

113, 114. Introductory Electronics. I, II. 3 hr. per sem. PR: 1 year of college physics. Mr. Temple

116. Photography. II. 3 hr. PR: 1 year of college physics, 1 year of college chemistry. The physics and chemistry of photography with practical application. Mr. Farr

117. Descriptive Meteorology. I. 3 hr. PR: 1 year of college physics. Description of the atmosphere and its weather. Reading and analysis of weather maps. Weather observations. Mr. Williamson

118. Physical Meteorology. II. 3 hr. PR: Physics 117 or equiv. The physics of the atmosphere. Analysis of surface and upper air charts. Forecasting. Mr. Williamson

201, 202. Special Topics. I, II. 1-3 hr. per sem. Staff

213. Introductory Electronics. S. 3 hr. PR: 1 year of college physics. Primarily for Education majors, not for graduate credit for science majors. Mr. Temple

221. Optics. II. 3 hr. PR: 10 hours of college physics, calculus. Work with optical instruments, spectrometry, interferometry, and polarization. Mr. Jefimenko

225, 226. Introduction to Modern Physics. I, II. 3 hr. per sem. PR: 19 hr. of college physics, calculus. Particle analysis, phenomena connected with the structure of the atom. Mr. Ford

231, 232. Theoretical Mechanics. I, II. 3 hr. per sem. PR: 10 hr. college physics, calculus. Theorems and problems in intermediate mechanics. Mr. Williamson

233, 234. Introductory Electricity and Magnetism. I, II. 3 hr. per sem. PR: 10 hr. physics, calculus. Electrostatic, magnetostatics, network analysis, introduction of electrodynamics, and applications. Mr. Jefimenko

241, 242. Physics Laboratory. I, II. 1 hr. To accompany Physics 231, 232. Mr. Ford

243, 244. Physics Laboratory. I, II. 1 hr. To accompany Physics 233, 234. Mr. Jefimenko

245, 246. Physics Laboratory. I, II. 1 hr. To accompany Physics 225, 226. Mr. Ford

247, 248. Physics Seminar. I, II. No credit. Required of junior, senior and graduate physics majors. Staff

254. Outline of Modern Physics. S. 3 hr. PR: 10 hr. college physics. 1 year college math. Selected topics in modern physics. Primarily for Education majors, not open to physics majors. Mr. Ford

255, 256. Workshop for Physics Teachers. SI, SII. 2 hr. PR: 1 year college physics, 1 year college mathematics. Techniques of apparatus construction and demonstration. Primarily for Education majors, not open to physics majors. Mr. Williamson

257. Photography. SI. 3 hr. PR: 1 year physics or equiv. Primarily for Education majors, not open to physics majors. Mr. Farr

258. Light. SII. 3 hr. PR: 1 year physics or equiv. Primarily for Education majors, not open to physics majors. Mr. Ford

261, 262. Molecular Physics. I, II. 3 hr. per sem. PR: Physics 225, 226. Molecular spectra, molecular structure and solid state physics. Mr. Rexroad

271, 272. Solid State Physics. I, II. 3 hr. PR: Physics 225, 226. Mr. Pavlovic

283. Thermodynamics. I. 3 hr. PR: 10 hr. of college physics, calculus. Application of first and second laws of thermodynamics to physical systems. Mr. Pavlovic

284. Kinetic Theory. II. 3 hr. PR: 10 hr. of college physics, calculus. Boltzman distribution, viscosity, diffusion, thermal conductivity, specific heat. Mr. Pavlovic

287, 288. Introduction to Mathematical Physics. I, II. 3 hr. per sem. PR: 10 hr. of college physics, calculus. Boundary value problems in vibration, heat conduction, hydrodynamics, special relativity. Mr. Thomas

Graduate Division

321, 322. Physical Optics. I, II. 3 hr. per sem. PR: Physics 221, and a course in differential equations. Mr. Ford

331, 332. Advanced Classical Mechanics. I, II. 3 hr. PR: Calculus, Physics 231, 232. Lagrangian and Hamiltonian formulation of mechanics, Hamilton-Jacobi theory, small oscillations. Mr. Rexroad

333, 334. Advanced Electricity and Magnetism. I, II. 3 hr. PR: Physics 233, 234, and a course in differential equations. Wave propagation, electrodynamics of charged particles. Mr. Jefimenko

341, 342. Research Seminar. I, II. 3 hr. PR: Consent. Discussion of problems encountered in particular fields of research, and their relation to other areas of physics. Staff

351, 352. Quantum Mechanics. I, II. 3 hr. per sem. PR: Physics 225, 226. Schroedinger's equations, hydrogen atom, perturbation, molecular forces. Mr. Rexroad

353. Advanced Quantum Mechanics. I. 3 hr. PR: Physics 351, 352. Study of relativistic theory, many electron systems, introduction to quantum electrodynamics. Staff

363, 364. Nuclear Physics. I, II. 3 hr. per sem. PR: Physics 225, 226. Theory of nuclear forces, transformation, energy levels. Mr. Thomas

383. Statistical Mechanics. II. 3 hr. PR: Physics 283, 352. Classical statistics, Boltzman, F-D, and B-E statistics, theory of fluctuations. Mr. Vehse

397, 398. Research. I, II. 1-6 hr. per sem. PR: Consent. Staff

POLITICAL SCIENCE

Professors Williams, Frasure, Stewart and Sturm;* Associate Professor Haythurst; Assistant Professors Gibson, Gilkey, Rice, Ross, and White.

The political science curriculum provides a systematized course of study of the origin, basis, and nature of the state in its many and varied aspects. These include: principles, organization, and structure of political institutions, both domestic and foreign; the processes and functioning of government; interrelationships between the political institution on various levels of government; political behavior; the control of government instrumentalities and the means for holding its agents responsible; and the identification and analysis of public problems falling within the range of government. Course offerings in the Department of Political Science provide a basic general knowledge of the field, as well as more extensive and intensive training in the specialized areas of political science, particularly on the senior and graduate levels.

Primary departmental objectives may be classified under four principal headings as follows:

1. To develop an understanding of the role of government in modern society, thus contributing to a general, liberal education and to preparation of students for a career in the public service.
2. To impart a basic knowledge and understanding of the techniques and processes of government and administration to those persons who look forward to a career in the public service.
3. To provide pre-professional training for students who are preparing to enter the legal profession.
4. To provide advanced and specialized instruction, through the Ph.D. degree, for persons who wish to enter teaching or research in the field of political science.

The political science curriculum, therefore, enables the major in this field to gain an understanding of the political society in which he lives and also to plan his academic program so as to prepare himself for a career of public service.

Courses Suggested for Political Science Majors

FIRST YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
English 1	3	English 2	3
Laboratory Sci.	4	Laboratory Sci.	4
Foreign language	3	Foreign language	3
Electives, Group 1	3-4	Electives, Group 1	3-4
Mil. or Air Sci.	1 2	Mil. or Air Sci.	2 2
Phys. Ed.	1	Phys. Ed.	1
	14-17		14-17

SECOND YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
Pol. Sci. 1	3	Pol. Sci. 2	3
Foreign language	3	Foreign language	3
Hist. 52	3	Hist. 53	3
Econ. 1	3	Econ. 2	3
Psych. 1 or Sociol. 1	3	Philos. 4	3
		Electives	1-2
Mil. or Air Sci.	3 2	Mil. or Air Sci.	4 2
Phys. Ed.	1	Phys. Ed.	1
	17-19		17-20

THIRD YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
Pol. Sci. 150	3	Pol. Sci. 120	3
Pol. Sci 200	3	Pol. Sci. electives	6-9
Pol. Sci. electives	3-6	Elective, Group 3	3
Elective, Group 3	3	Elective, Group 5	3
Elective, Group 4	3	Elective, minors	3
Elective, minors	3		
	18-20		18-21

FOURTH YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
Pol. Sci. 170	3	Pol. Sci. 171	3
Pol. Sci. electives	6-9	Pol. Sci. electives	6-9
Electives minors	6-9	Electives, minors	6-9
	18-21		18-21

*Resigned September 1, 1962.

REQUIREMENTS FOR MAJORS

Hours. Undergraduate majors in political science are required to take at least twenty-six hours of upper-division course work in the department. There must be a first minor consisting of twelve hours of upper-division courses, normally in history, economics, sociology, psychology, or philosophy, and a second minor of six hours of upper-division work in a related field.

Required Courses. Each undergraduate major is required to take Political Science 1 (3 hr.) or 2 (3 hr.). Departmental majors are encouraged to take both Political Science 1 and 2.

Distribution of Courses. The major in political science should work out his program in such a way as to secure a well-rounded knowledge of the field, as well as to concentrate in some particular area. Although the twenty-six hours of upper-division work in political science is the minimum requirement, students should take at least thirty-two hours.

The following are distribution requirements for an undergraduate major in political science:

1. At least one upper-division course in each of the six groups into which the offerings of the department are divided.
2. At least three upper-division courses in some one group.

Groupings of Upper-Division Courses by Fields

I. *American National, State, and Local Government*
Pol. Sci. 111, 113, 120, 210, 211, 213, 218, 221, 225, 226, 310, 311, 320-321, 325-326.

II. *Politics and Policy Development*
Pol. Sci. 130, 231, 232, 233, 234, 330-331.

III. *Public Administration*
Pol. Sci. 140, 241, 242, 243, 244, 245, 346-347.

IV. *Foreign and Comparative Government*
Pol. Sci. 150, 250, 251, 252, 253, 254, 255, 256, 351-352.

V. *International Relations, Organizations and Law*
Pol. Sci. 160, 261, 262, 263, 264, 265, 361-362.

VI. *Political Theory*
Pol. Sci. 170, 171, 272, 273, 274, 375-376.

COURSES OF INSTRUCTION

Lower Division

1. ELEMENTS OF DEMOCRATIC GOVERNMENT. I, II. 3 hr. Introduction to government. Origin, forms, and functions of the state; organization and forms of government; and the relations of groups and individuals to the state. Primarily for freshmen. Staff

2. THE AMERICAN FEDERAL SYSTEM. I, II. 3 hr. A survey course in American national government. Intended primarily for freshmen and sophomores. Staff

Upper Division

101. INTRODUCTION TO GOVERNMENT. I, II. 3 hr. (Exclusively for students in the College of Agriculture and the College of Engineering). A consideration of the basic principles and operation of national, state, and local government in the United States. Staff

111. FUNCTIONS OF AMERICAN NATIONAL GOVERNMENT. I. 3 hr. The activities of the executive branch of government, particularly as they relate to social and economic development; expansion of government activities and services since 1932. Mr. Ross

113. AMERICAN CONSTITUTIONAL PRINCIPLES. II. 3 hr. U.S. Constitution as interpreted by the Supreme Court. Treatment is analytical rather than historical. Text supplemented by some leading cases. Primarily for pre-law students. Mr. White

120. State and Local Government. I, II. 3 hr. Survey of the legal basis, structure, and operation of state and local governments, their relations with each other and their place in the federal system. Mr. Hayhurst

130. Political Parties and Electoral Processes. I. 3 hr. The nature of political parties. Public regulation of parties and electoral processes. A close examination of suffrage, nominating devices, campaign procedures, and the conduct of elections. Mr. Ross

140. Introduction to Public Administration. I, II. 3 hr. Introductory study of the development, organization, procedures, processes, and human relations factors of governmental administration in American democracy. Mr. Stewart

150. Contemporary European Governments. I, II. 3 hr. Comparative analysis by countries of constitutions, political structures, and functions, with major emphasis upon the United Kingdom, France, Russia, and West Germany. Mr. Williams

160. International Relations. I. 3 hr. Introduction to contemporary world politics. Just enough background to make present-day international affairs more understandable. Mr. Frasure

170. History of Political Thought: Plato to Machiavelli. I. 3 hr. Examination of major political ideas from the Greeks to sixteenth century with special emphasis upon development of natural law and western conception of justice. Mr. Williams and Mr. Gibson

171. History of Political Thought: Machiavelli to Bentham. II. 3 hr. PR: Pol. Sci. 170 or consent. Analysis of the political ideas which developed from the separation of faith and reason, the culmination of this movement in rational integral liberalism, and the origins of modern conservatism as expounded by Edmund Burke. Mr. Williams

200. Research Materials and Techniques in Political Science. I. 3 hr. A study of basic source materials in political science and of the techniques and methods of governmental research. Mr. Sturm

210. American Political Institutions. I. 3 hr. PR: Pol. Sci. 2 or consent. Development of the Constitution, Congress, the Presidency, and the Supreme Court as institutions with special attention to current problems and issues. Mr. Stewart

211. Problems of American National Government. II. 3 hr. This course is intended to give recognition to the major contemporary problems of government. Extensive reading of background materials as well as current literature in the field. Mr. Stewart

213. American Constitutional Law and Theory. II. 3 hr. PR: Pol. Sci. 2 or consent. Basic principles of American constitutional law as developed through interpretation with special emphasis on constitutional theories and national development. Primarily for seniors and graduate students. Mr. Sturm

218. Government and Business. I or II. 3 hr. PR: Pol. Sci. 2 or consent. An examination of government regulations of the economy dealing with the origin and development of public policies, constitutional and policies basis of regulation, relationships between political and economic institutions and processes, and an evaluation of the consequences of regulatory policies. Mr. Hayhurst

221. West Virginia Government and Administration. I. II. 3 hr. A study of the organization and operation of the state government of West Virginia. Mr. Sturm

225. Municipal Government. II. 3 hr. Legal basis, structure, operation, and problems of municipal government and municipal relations with other governmental units. Mr. Hayhurst

226. Problems of State and Local Government. I. 3 hr. An examination of current problems of state, county, and municipal governments. Students are expected to have completed Pol. Sci. 120 or its equiv. Mr. Ross

231. History of Political Parties. I. 3 hr. An examination of the growth of political parties in the United States. Analysis of issues in presidential campaigns as they relate to political party development. Mr. Ross

232. Public Opinion and Propaganda. II. 3 hr. Analysis of techniques of sampling and measuring public opinion; detection of propaganda; the nature of propaganda and methods of the propagandist. Mr. Ross

233. Current Political Issues. I. 3 hr. An examination of political party platforms and the major issues of the political campaign. Students will be expected to examine background materials thoroughly. Mr. Ross

234. The Legislative Process. II. 3 hr. Structure and organization of legislative bodies. Powers of legislature. Detailed study of lawmaking procedures. The influence of outside forces. Mr. Ross

241. Administrative Organization and Management. II. 3 hr. PR: Pol. Sci. 140 or consent. Analysis of administrative organization and reorganization and of such management functions as leadership, planning, coordination, and financial organization. Mr. Stewart

242. Financial Administration. I. 3 hr. PR: Pol. Sci. 140 or consent. Survey of methods and problems of fiscal management, including budgeting, accounting, tax administration, expenditure control, auditing, purchasing, and financial organization. Staff

243. Public Personnel Administration. II. 3 hr. PR: Pol. Sci. 140 or consent. Survey of the development of public personnel management, with attention to organization, recruitment, classification, training, morale, unionism, and other aspects of public personnel administration. Staff

244. Administrative Law and Regulations. II. 3 hr. PR: Pol. Sci. 140 or consent. Study of the law of administration, primarily by the case method, covering administrative powers, procedure in administrative adjudication and rule-making, discretion, judicial control, and administrative liability. Mr. Gilkey

245. Public Administration and Policy Development. 3 hr. PR: Pol. Sci. 140 or consent. Analysis of decision-making and policy development in the administrative process by the case method. Mr. Stewart

250. Comparative Government. I. 3 hr. An examination of the leading problems of government organization, constitutional framework, political parties and public opinion, and administrative procedures in several countries with emphasis on the United States, United Kingdom, France, Germany, and Russia. The subject is examined topically dealing with each problem in several countries. Mr. Williams

251. Modern Dictatorships. II. 3 hr. Politically undemocratic governments. Provides background of dictatorship generally, followed by treatment of several modern dictatorships. Mr. Williams

252. British Government and Politics. II. 3 hr. Intensive study of British government with emphasis upon both internal and external policies, primarily during the twentieth century. Mr. Frasure

253. Contemporary Governments of the Commonwealth. II. 3 hr. A survey of imperial organization and Dominion status; a comparative study of the nature and development of political institutions in Canada, Australia, New Zealand, and South Africa. Mr. Williams

254. Governments of Asia. I. 3 hr. A survey of contemporary politics and governments of Asia. Mr. Gibson

255. Governments of Latin America. II. 3 hr. A comparative study of the major nations of Latin America. Mr. Gilkey

256. Governments of the Middle East. I. 3 hr. An examination of the governments and political forces of the Middle East. Mr. Rice

261. International Organization. II. 3 hr. Emphasis will be placed upon agencies created since the close of World War II. Some reference to development of international law and League of Nations. Mr. Rice

262. Specialized Agencies of the United States. II. 3 hr. A detailed treatment of the specialized agencies and related institutions. Mr. Rice

263. Public International Law. I. 3 hr. Law governing relations among nations, including development of rules, means of enforcement, and conflicts between theory and practice. Mr. White

264. Conduct of American Foreign Relations. I. 3 hr. An attempt will be made to determine the factors behind our foreign policy with emphasis upon policy during the twentieth century. Mr. Rice

265. Basic Factors in Power Politics. II. 3 hr. PR: Pol. Sci. 2 or consent. Analysis of factors of power in the nation-state system. Evaluation of nationalism and concepts of national interest in modern world politics. Mr. Frasure and Mr. Rice

272. Recent and Contemporary Political Thought. I. 3 hr. PR: Pol. Sci. 171 or consent. An examination of integral liberalism and the forces leading to the decline of liberalism and a critical analysis of the fascist and communist ideologies with their threat to the traditions of western civilization embodied in Christianity and conservatism. Mr. Williams

273. American Political Theory. II. 3 hr. PR: Pol. Sci. 171 or consent. A survey of major political ideas and their influence upon society and government from the seventeenth century to the present. Mr. Gibson

274. Problems in Contemporary Political Thought. II. 3 hr. An intensive study of current trends in political thought through examination of the works of contemporary writers. Mr. Williams and Mr. Gibson

Graduate Division

310-311. Directed Reading and Research in American National Government. I, II. 2-4 hr. each. Mr. Stewart and Mr. Sturm

320-321. Directed Reading and Research in State Government. I, II. 2-4 hr. each. PR: Pol. Sci. 120 or consent. Mr. Hayhurst

325-326. Directed Reading and Research in Local Government. I, II. 2-4 hr. PR: Pol. Sci. 225 or consent. Mr. Hayhurst

330-331. Directed Reading and Research in Politics. I, II. 2-3 hr. PR: Pol. Sci. 130 or consent. Mr. Ross

346-347. Directed Reading and Research in Public Administration. I, II. 2-4 hr. each. PR: Pol. Sci. 140 or consent. Mr. Sturm and Mr. Stewart

351-352. Directed Reading and Research in Comparative Governments. I, II. 2-4 hr. each. Mr. Williams and Mr. Gibson

361-362. Directed Reading and Research in International Relations. I, II. 2-4 hr. each. Mr. Frasure and Mr. Rice

375-376. Directed Reading and Research in Political Theory. I, II. 2-4 hr. each. Mr. Williams and Mr. Gibson

380. Thesis. I, II. 2-6 hr. Staff

ROMANCE LANGUAGES AND LITERATURE

Professors Manning, McBride, and Singer; Associate Professors Frere and Herrera; Assistant Professor Wade; Instructors Beauchemin, Cantillano, Downes, Franck, and Pushkarsh.

Courses 1 and 2 or two years of high-school credit will be required for entrance to courses 5 and 6. Usually students who had two years study of the language in high school should consult the departmental adviser before enrolling.

Students whose grades have constantly fallen below "B" in language work in the lower division should not select a Romance Language as a major subject.

The following courses are recommended as a minor if a speaking knowledge of the language is desired: French 103, 104, 109, and 231; Spanish 103, 104, 109, and 110.

In order to be recommended by this department for the degree of Bachelor of Arts a student must complete, in addition to special requirements for the A.B. degree, one of the programs outlined below.

Program for French Majors

Required language courses: (a) French 103, 104, 109, 115, 116, 118, 217, and 231; (b) Spanish or Italian (6 to 12 hours).

FIRST YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
English 1	3	English 2	3
Lab. Science	4	Lab. Science	4
French 5*	3	French 6*	3
Hist. 1 or Humanities 1	3-4	Hist. 2 or Humanities 2	3-4
Phys. Ed.	1	Phys. Ed.	1
Mil. or Air Sci. 1	2	Mil. or Air Sci. 2	2
Electives	3	Elective	3
	14-17		14-17

SECOND YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
French 103	3	French 104	3
Span. 1 or Ital. 1	3	Span. 2 or Ital. 2	3
Pol. Sci. 1 or Soc. Sci. 1	3-4	Pol. Sci. 2 or Soc. Sci. 2	3-4
Electives Group 5	3	Electives Group 4	3
Phys. Ed.	1	Phys. Ed.	1
Mil. or Air Sci. 3	2	Mil. or Air Sci. 4	2
Electives	0-3	Electives	0-3
	17-18		17-18

THIRD YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
French 109	3	French 231	3
French 115	3	French 116	3
Minor subject and electives	12	Minor subject and electives	12
	17-18		17-18

FOURTH YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
French 118	3	French 217	3
Minor subject and electives	15	Minor subject and electives	15
	17-18		17-18

*If a student has not had French in high school he will take French 1 and 2 in first year and will take French 5 and 6 concurrently with French 103 and 104 in second year.

Program for Spanish Majors

Required language courses: (a) Spanish 103, 104, 109, 110, 211, 212, 221, and 222; (b) French or Italian (6 to 12 hours).

FIRST YEAR				SECOND YEAR			
First Sem.	*Hr.*	*Second Sem.*	*Hr.*	*First Sem.*	*Hr.*	*Second Sem.*	*Hr.*
English 1	3	English 2	3	Spanish 103	3	Spanish 104	3
Lab. Science	4	Lab. Science	4	Fr. 1 or Ital. 1	3	Fr. 2 or Ital. 2	3
Spanish 5*	3	Spanish 6*	3	Pol. Sci. 1 or Soc. Sci. 1	3-4	Pol. Sci. 2 or Soc. Sci. 2	3-4
Hist. 1 or Humanities 1	3-4	Hist. 2 or Humanities 2	3-4	Electives Group 5	3	Electives Group 4	3
Phys. Ed.	1	Phys. Ed.	1	Phys. Ed.	1	Phys. Ed.	1
Mil. or Air Sci. 1	2	Mil. or Air Sci. 2	2	Mil. or Air Sci. 3	2	Mil. or Air Sci. 4	2
Electives	3	Elective	3	Electives	0-3	Electives	0-3
	17-18		17-18		17-18		17-18

THIRD YEAR				FOURTH YEAR			
First Sem.	*Hr.*	*Second Sem.*	*Hr.*	*First Sem.*	*Hr.*	*Second Sem.*	*Hr.*
Spanish 109	3	Spanish 110	3	Spanish 221	3	Spanish 222	3
Spanish 211	3	Spanish 212	3	Minor subject and electives	15	Minor subject and electives	15
Minor subject and electives	12	Minor subject and electives	12				
	17-18		17-18		17-18		17-18

*If a student has not had Spanish in high school he will take Spanish 1 and 2 in first year and will take Spanish 5 and 6 concurrently with Spanish 103 and 104 in second year.

Courses of Instruction

FRENCH

Lower Division

1. Elementary French. I, II. 3 hr. Staff

2. Elementary French. I, II. 3 hr. Continuation of French 1. Staff

5. Intermediate French. I, II. 3 hr. Reading of modern French prose. Staff

6. Intermediate French. II. 3 hr. Continuation of French 5. Staff

Upper Division

103. Elementary Conversation. I. 3 hr. PR: 12 hr. French or equiv. Open to exceptional sophomores by permission of department chairman only. Staff

104. La Langue Pratique. II. 3 hr. PR: 12 hr. French or equiv. Open to exceptional sophomores by permission of department chairman only. Staff

109. Grammar and Conversation. I. 3 hr. PR: 12 hr. French or equiv. Miss Wade

*110. Advanced Conversation. II. 3 hr. PR: French 109 or equiv. Staff

115. The Classical School. I. 3 hr. PR: 12 hr. French or equiv. Mr. Manning

116. Literature of the Eighteenth Century. II. 3 hr. PR: 12 hr. French or equiv. Mr. Singer

118. Literature of the Nineteenth Century. I. 3 hr. PR: 12 hr. French or equiv. Mr. McBride

*Not given in 1962-63.

*151. French for Public Schools. I. 3 hr. PR: French 103, 104 or French 109, 110 or equiv. An intensive study of conversational French for use in the elementary schools, with emphasis on pronunciation and common usage. Observation and practice. Staff

*152. French for Public Schools. II. 3 hr. Continuation of French 151. Staff

217. French Civilization. II. 3 hr. PR: 12 hr. French. Miss Wade

*221. The Romantic Movement. I. 3 hr. PR: French 115. Mr. Singer

*222. French Realism. II. 3 hr. PR: French 118. Mr. Singer

226. Literary Criticism. I. 3 hr. PR: A.B. in French or consent. Mr. Singer

*229. Literature of the 16th Century. I. 3 hr. PR: 18 hr. French. Staff

231. Phonetics and Pronunciation. II. 3 hr. PR: 18 hr. French or equiv. Mr. Manning

*237. Moliere. II. 3 hr. PR: French 115. Staff

244. Explication de Textes. II. 3 hr. PR: 18 hr. French or equiv. Mr. Manning

265. Methods of Research. II. 3 hr. PR: A.B. in French or special consent. Mr. Singer

271. The Modern Novel to 1930. I. 3 hr. PR: A.B. in French or consent. Mr. Frere

272. The Novel after 1930. II. 3 hr. PR: A.B. in French or consent. Mr. Frere

*290. Old French. II. 3 hr. Mr. Manning

Graduate Division

393. Special Topics. I. 3-5 hr. Themes in French literature and culture. Staff

SPANISH

Lower Division

1. Elementary Spanish. I, II. 3 hr. Staff

2. Elementary Spanish. I, II. 3 hr. PR: Continuation of Spanish 1. Staff

5. Intermediate Spanish. I. 3 hr. Reading of modern Spanish prose. Staff

6. Intermediate Spanish. II. 3 hr. Continuation of Spanish 5. Staff

103. Elementary Conversation. I. 3 hr. PR: 12 hr. Spanish or equiv. Open to exceptional sophomores by permission of department chairman only. Mr. Herrera

104. La Lengua Practica. II. 3 hr. PR: 12 hr. Spanish or equiv. Open to exceptional sophomores by permission of department chairman only. Mr. Herrera

109. Grammar and Conversation. I. 3 hr. PR: 12 hr. Spanish or equiv. Staff

110. Advanced Conversation. II. 3 hr. PR: Spanish 109, or equiv. Staff

*151. Spanish for Public Schools. I. 3 hr. PR: Spanish 103, 104 or Spanish 109, 119 or equiv. An intensive study of conversational Spanish for use in the elementary schools, with emphasis on pronunciation and common usage. Observation and practice. Mr. Herrera

*152. Spanish for Public Schools. II. 3 hr. Continuation of Spanish 151. Mr. Herrera

*211. Nineteenth Century Literature to 1870. I. 3 hr. Spanish 5, 6 or equiv. Mr. Singer

*Not given in 1962-63.

*212. Spanish Literature Since 1870. II. 3 hr. PR: Spanish 1, 6 or equiv. Mr. Singer

215. Lyric Poetry. I. 3 hr. PR: A.B. in Spanish or consent. Mr. Herrera

216. Civilization and Culture. II. 3 hr. PR: 12 hr. Spanish or equiv. Staff

*217. Spanish American Literature and Culture. I. 3 hr. PR: Spanish 5, 6 or equiv. Staff

*218. Spanish American Literature and Culture. II. 3 hr. PR: Spanish 5, 6 or equiv. Continuation of Spanish 217. Staff

221. Literature of the Golden Age. I. 3 hr. PR: 18 hr. Spanish, or equiv. Mr. Herrera

222. The Golden Age After Lope de Vega. II. 3 hr. PR: Spanish 221. Mr. Herrera

*223. Estudios de Estilo. I. 3 hr. PR: 18 hr. Spanish or equiv. Staff

*224. Explication de Textos. II. 3 hr. PR: 18 hr. Spanish or equiv. Staff

225. The Picaresque Novel. I. 3 hr. PR: A.B. in Spanish or consent. Mr. Herrera

265. Methods of Research. II. 3 hr. PR: A.B. in Spanish or special consent. Mr. Singer

*291. Cervantes. I. 3 hr. Mr. Singer

*295. Sixteenth Century Literature. I. 3 hr. Staff

*296. Old Spanish. II. 3 hr. Staff

Graduate Division

392. Special Topics. II. 1-3 hr. Themes in Spanish literature and culture. Staff

ITALIAN

Lower Division

1. Elementary Italian. I. 3 hr. Staff

2. Elementary Italian. II. 3 hr. Continuation of Italian prose. Staff

5. Intermediate Italian. I. 3 hr. Reading of modern Italian prose. Staff

6. Intermediate Italian. II. 3 hr. Continuation of Italian 5. Staff

Upper Division

*109. Composition and Conversation. I. 3 hr. Staff

*110. Advanced Conversation. II. 3 hr. Staff

RUSSIAN

Instructor Pushkarsh.

The courses in Russian are designed to enable the student to follow the scientific developments in Russia. The elementary course will present the fundamentals of grammar; pronunciation, with some practice in conversation; and translation of simple scientific Russian in the fields of chemistry, physics, and medicine.

Lower Division

1. Elementary Russian. I. 3 hr. Mr. Pushkarsh

2. Elementary Russian. II. 3 hr. Mr. Pushkarsh

*Not given in 1962-63.

5. Intermediate Russian. I. 3 hr. Reading of modern Russian prose. Mr. Pushkarsh
6. Intermediate Russian. II. 3 hr. Continuation of Russian 5. Mr. Pushkarsh

Upper Division

103. Elementary Conversation. II. 3 hr. PR: 12 hr. Russian or equiv. Open to exceptional sophomores by permission of department chairman only. Mr. Pushkarsh

SOCIAL WORK

Professor Scher and Fulton; Associate Professor Whitney; Assistant Professor Mudd; Associate in Rehabilitation Social Work Ellison; Associate in Psychiatric Social Work Harvey; Lecturers Bateman, Edelston, Sacks, and Williams.

The Department of Social Work provides graduate professional education for social work, and an undergraduate curriculum.

Undergraduate Social Work Program

The undergraduate curriculum emphasizes liberal arts education. It offers to juniors and seniors in the college a limited number of social work courses to be taken concurrently with a concentration in the behavioral sciences, based on a lower-division foundation of general education. This program has been developed for three groups of students: (1) those who are preparing for graduate education in social work; (2) those who wish to qualify for positions for which graduate education is not now required; and (3) those who wish to acquire an understanding of the field of social work as part of their general education or with a view to service on agency boards, committees and in community projects.

Social work courses are available also to students from other departments who wish to include knowledge of this field in their preparation for teaching, school administration, educational counseling, psychology, recreation, nursing, etc.

The undergraduate curriculum in Social Work includes: (1) two lower-division years of general education, including beginning courses in the behavioral sciences: (2) two upper-division years, during which the student continues a concentration in the behavioral sciences and majors in the Department of Social Work. It is recommended that the student complete, during the four college years, a total of 50 to 60 hours in the behavioral sciences, including history, political science, economics, psychology, sociology, and social work.

Upon the completion of this curriculum and all other requirements of the College of Arts and Sciences, the student will be eligible for a Bachelor of Science degree with a major in social work.

The following curriculum is suggested, rather than mandatory.

FIRST YEAR				SECOND YEAR			
First Sem.	*Hr.*	*Second Sem.*	*Hr.*	*First Sem.*	*Hr.*	*Second Sem.*	*Hr.*
Lab. Science*	4	Lab. Science*	4	Foreign language**	3	Foreign language**	3
Foreign language	3	Foreign language	3	Hist. 52	3	Hist. 53	3
English 1	3	English 2	3	Econ. 1	3	Econ. 2	3
Group 1 electives	3-4	Group 1 electives	3-4	Psych. 1†	3	Pol. Sci. 2	3
Mil. or Air Sci. 1 2		Mil. or Air Sci. 2 2		Group 3 elective	3	Group 3 elective	3
Phys. Ed.	1	Phys. Ed.	1	Mil. or Air Sci. 3 2		Mil. or Air Sci. 4 2	
				Phys. Ed.	1	Phys. Ed.	1
	14-17		14-17		16-17		16-17

*Preferably Biology.
†Omitted if Psych. 3 and 4 are offered to satisfy the Laboratory Science requirement.
**May be omitted if two units of high school credit in foreign language are offered by the student.

THIRD YEAR				FOURTH YEAR			
First Sem.	*Hr.*	*Second Sem.*	*Hr.*	*First Sem.*	*Hr.*	*Second Sem.*	*Hr.*
Social Work 212	3	Social Work 285	3	Social Work 215	3	Social Work 221	
Sociol. Elect.	3	Sociol. 243	3	Sociol. 202	3	*or* 260	3
Psychology Elect.	3	Pol. Sci. 120	3	Home Econ. 106	3	Home Econ. 206	3
Other Elect.	7-9	Electives	7-9	Electives	5-9	Electives	8-12
	16-18		16-18		14-18		14-18

Admission Requirements

Upper Division

Students may be admitted to the upper division in the Department of Social Work upon completion of at least 58 semester hours at West Virginia University or another accredited educational institution, with a total of not less than 10 semester hours in economics, political science, psychology, sociology, and history, and the satisfaction of all other requirements for transfer to the upper division.

The Graduate Social Work Program

The graduate program in Social Work includes two years of study on campus and in field work agencies and leads to the degree of Master of Social Work. The program is accredited by the Council on Social Work Education, the central standard setting body for the field.

Admission requirements and procedures are set forth in the *Announcements* of the Graduate School.

Courses of Instruction

General Prerequisites: Twelve semester hours in the behavioral sciences are required for admission to social work courses in the 200 series. The 300 series courses are designed as an integrated program for students who are working towards the M.S.W. degree. Courses are open to other students by consent and as required in their curricula.

212. Community Social Welfare Resources. II, S. 3 hr. The purpose, structure and function of selected, significant social service agencies in the State and area. Lecture, discussion and readings. In addition, students will spend limited time as volunteers in a selected agency and will report on this experience. Dr. Scher

214. Introduction to Social Casework. I and II. 3 hr. PR: 10 hr. in behavioral sciences and current employment in a health and welfare agency. The psychology of client and caseworker and the general character of casework help. Lecture, discussion and analysis of selected case materials. Mr. Harvey

215. Psychosocial Growth and Behavior. I. 3 hr. Study of man as a psychosocial, biological entity. Structure and dynamics of personality development. Models of personality. Consideration of common adjustment problems. Mr. Whitney

221. The Field of Social Work. II, S. 3 hr. A survey of modern social services as offered in various settings: family agencies, medical and psychiatric clinics and hospitals, schools, and settlement houses. Mr. Whitney

260. Child Welfare. I, S. 3 hr. The physical and mental health needs of children; services provided by public and private agencies to parents and to children who need protection, assistance, foster care, adoption, or services in their own homes; historical background. Staff

285. Introduction to Public Welfare. I, S. 3 hr. An introduction to public welfare, including Public Assistance and Old Age Programs, Survivors and Disability Insurance; historical development, administrative structures, perspectives. Staff

Graduate Division

301. Social Casework I. I. 3 hr. An introduction to the objectives, basic concepts, generic principles and processes of the social casework method. Staff

302. Social Casework II. S. 3 hr. Continuation of S.W. 301. Social casework theory; special attention is given to the integration of classroom learning and field practice. Staff

304. Community Organization. II. 3 hr. Community organization as a professional social work method. Principles, methods and structure of community organization; responsibilities of the social worker in various types of organization. Staff

305. Introduction to Social Group Work. I. 2 hr. Principles and methods used by group workers to help individuals use group relationships for individual growth and improved social functioning. Mr. Sacks

306. The Social Services I. I. 3 hr. A study of public and private welfare programs in the United States, generally, and West Virginia and its geographical area, more specifically. The philosophy and history of social services, including European traditions and models. The administrative structure and patterns of financing of social services. Mr. Fulton

307. The Social Services II. II. 3 hr. Further analysis and evaluation of social services. Current issues are evaluated in several areas of welfare services. Mr. Fulton

311-312. Field Work. I, II, S. 5 hr. each. Field instruction and practice in selected agencies under general direction of the faculty and under direct supervision of an agency supervisor or faculty members. Staff

314. Field Work. I, II. 1-4 hr. Field instruction and practice in a selected agency, under general direction of the faculty. Supplements S.W. 311 and 312. Staff

315. Normal Development of the Individual. I. 3 hr. Man as a psychosocial, biological entity. Normal physical, psychological and social development. Theories of personality structure and dynamics. The mechanisms for maintaining social functioning under stress. Staff

320. Psychopathology. S. 2 hr. The application of psychodynamic principles to the study of emotional and mental illness. Consideration of the major organic and functional disorders. Staff and Psychiatric Lecturers

322. Social Casework III. II. 3 hr. An advanced course in casework. Application of theory in varied settings. Relationships to other disciplines. Miss Mudd

325. Personality and Social Functioning. II. 3 hr. PR: Second-year M.S.W. students only. An advanced course in the biological, psychological and social determinants of human behavior with emphasis on social functioning as the measure of adjustment. Mr. Whitney

331-332. Advanced Field Work. I. 5 hr. each. Continuation of S.W. 311-312, usually in a different setting. Staff

334. Advanced Field Work. I, II, S. 1-4 hr. Continuation of S.W. 331 and 332. Designed to supplement S.W. 331 and 332. Staff

351. Social Work Research. I. 2 hr. Introduction to research and the scientific method. The scientific approach to social welfare problems. Elements of research method. Mr. Edelston

352. Social Work Research II. II, S. 2 hr. A continuation of S.W. 351, emphasizing current social work research. Mr. Edelston

361. Social Agency Administration I. I. 2 hr. Basic concepts and principles of the administrative process, the responsibilities of the social caseworker. Ad-

ministration of social work practices. Democratic group process in administration. Structure and dynamics of the private agency and public welfare unit. Mr. Scher

371. Health, Disease, and Disability. I. 2 hr. Reactions to psychological, biological and social stress. The nature of health and disease. Concepts of adjustment, homeostasis and stress. Mr. Scher

381. Problem Report. 1 hr. Required of all candidates for the M.S.W. degree. Staff

382. Problem Report II. II, S. 2 hr. Staff

390, 393, 395. Seminar. II. 3 hr. Intensive study in student's area of specialization. Individual conferences with staff; selected or extensive reading; preparation of a report on the field of specialization. Seminar meetings for all students will supplement individual study. Staff

Rehabilitation Counseling

The Department of Social Work participates with the Department of Psychology and Educational Counseling in the Inter-Departmental Graduate Program in Rehabilitation Counseling. Complete details concerning Rehabilitation Counseling curricula and courses may be found in the *Announcements* of the Graduate School.

SOCIOLOGY

Professors Gibbard and Miller; Associate Professor Kerr; Assistant Professors Silberstein and Weller; Instructor Zawacki.

The study of sociology should help the student increase his understanding of the society in which he lives. An undergraduate major in sociology provides basic preparation for teaching social sciences in high school and for professional careers in social work and other fields involving interpersonal relations. The study of sociology should be an aid in citizenship and intelligent participation in modern life.

A major in sociology consists of 18 to 24 hours of upper-division courses including as a rule Sociol. 202, *Introduction to Social Research;* either Sociol. 243, *Introduction to Anthropology* or Sociol. 248, *Primitive Society,* and Sociol. 246, *Types of Sociological Theory.*

A student planning to major in sociology should take Sociol. 1 in either his freshman or sophomore year, and Sociol. 104 in his sophomore year.

The following program is offered as a guide to students in planning their programs, but need not be followed exactly.

FIRST YEAR				SECOND YEAR			
First Sem.	*Hr.*	*Second Sem.*	*Hr.*	*First Sem.*	*Hr.*	*Second Sem.*	*Hr.*
English 1	3	English 2	3	Sociol. 1	3	Sociol. 104	3
Foreign language	3	Foreign language	3	Foreign language	3	Foreign language	3
Laboratory Sci.	4	Laboratory Sci.	4	Speech 11 (either Sem.)	0-3	Speech 11 (either Sem.)	0-3
Electives		Electives		Psych. 1 (either Sem.)* or		Psych. 1 (either Sem.)* or	
Group 1	3-4	Group 1	3-4	Psych. 3	0-3-4	Psych. 3	0-3-4
Mil. or Air Sci.	1 2	Mil. or Air Sci.	2 2	Econ. 1 or Pol. Sci. 1	3	Econ. 2 or Pol. Sci. 2	3
		Phys. Ed.	1	Mil. or Air Sci.	3 2	Mil. or Air Sci.	4 2
				Phys. Ed. (W)	1	Phys. Ed. (W)	1
				Electives	0-4	Electives	0-4
	14-17		14-17		17-18		17-18

*If Psychology is not elected to fulfill the laboratory science requirement. Otherwise, courses which satisfy Group 3 requirements are recommended in place of psychology. If not met in the sophomore year, the Group 3 requirement may be satisfied in the junior year.

THIRD YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
Elective Group 3 (if not fulfilled)	3	Elective Group 3 (if not fulfilled)	3
Sociology electives	6	Sociol. 243	3
Minor subject elective	3	Sociology electives	6
Electives		Minor subject elective	3
		Electives	2-6
	17-18		17-18

FOURTH YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
Sociol. 202	3	Sociol. 246	3
Sociology elective	3	Sociology elective	3
Minor subject elective	3	Minor subject elective	3
Electives	8-9	Electives	8-9
	17-18		17-18

Courses of Instruction

Lower Division

1. Introduction to Sociology. I, II. 3 hr. Basic concepts; fundamental institutions and functions of society. Staff

Upper Division

Prerequisites for Sociology courses in the "200" series: Sociol. 1 or 102, or Social Sci. 1, 2 (or equivalents).

102. Principles of Sociology. I, II. 3 hr. Analysis of nature and operation of our society; formulation of sociological principles. (A first course mainly for upper-division students. Not for credit for students with credit for Sociol. 1.) Staff

104. Social Problems. I, II. 3 hr. Examination, within a sociological framework, of such topics as labor-management relations, social class conflict, family disorganization and parent-child relations, race relations, juvenile delinquency and crime, religious adjustment, and social planning. Mr. Weller

160. Family Living. I, II. 3 hr. A course without prerequisites, for students in all divisions of the University, to help them attain knowledge, values, and skills with respect to dating, courtship, mate selection, engagement, marriage, parenthood, and family life. Mr. Kerr

202. Introduction to Social Research. I. 3 hr. Trends in social research; examination of methods and techniques. Mr. Gibbard

205. Urban Sociology. II. 3 hr. Sociological analysis of institutional structure, social values, and individual goals in urban-industrial society; bureaucratization, collectivization, and mass culture; emphasis on political, economic, religious, and family institutions. Mr. Weller

208. The Community. S. 3 hr. An analytical course intended chiefly to provide background data for students interested in programs of community action. Topics to be included are: the basic characteristics of communities; community institutions and resources; social cleavages within the community; and community survey and community planning. Mr. Gibbard

210. Marriage and the Family. I, II. 3 hr. Sociological analysis of the contemporary family and its problems. Mr. Kerr

211. Sociology of Childhood. II. 3 hr. Adjustment of child to American culture. Mr. Kerr

220. Social Change. I. 3 hr. Sociological analysis of the major changes now going on in our society, of the forces underlying them, and of the tensions to which

they give rise. Alternative future directions; rational manipulation and planning for social change. Mr. Weller

224. Social Stratification. I. 3 hr. Description and analysis of various types of stratification systems, such as class and caste; social mobility, and status-striving. The course emphasizes the place of status, prestige, and power in the structure of American society. Mr. Silberstein

229. Population and Migrations. I. 3 hr. Population theories; growth, composition, and distribution of American population; immigration and culture pluralism; internal migrations and their consequences. Mr. Gibbard

231. Race Relations. I. 3 hr. Race relations in the U.S. with emphasis on the American Negro. Mr. Gibbard

233. Criminology. I, II. 3 hr. Explanation of crime; critical study of criminal justice, penal methods, and reform movements. Mr. Weller

234. Juvenile Delinquency. S. 3 hr. A scientific study of the nature, extent, and causes of delinquency in the United States. Methods of treatment, correction, and prevention, with emphasis on the work of the juvenile courts. Mr. Weller

235. Collective Behavior. I. 3 hr. Analysis of new group formation and behavior following social dislocation, social unrest, crowd behavior, and other forms of social contagion; the public and public opinion; social movements. Mr. Silberstein

243. Introduction to Anthropology. II. 3 hr. Biological history of man, analytical study of social organization, culture, and intellectual life of primitive man. Mr. Zawacki

244. Culture and Personality. II. 3 hr. Significant interrelations between the individual and his culture. Mr. Silberstein

246. Types of Sociological Theory. II. 3 hr. Examination of leading schools of sociological thought in our day. Staff

248. Primitive Society. II. 3 hr. Description and analysis of several relatively simple societies; their family life, kinship systems, politics, economics, and religious practices. Mr. Zawacki

250. Human Relations in Industry. II. 3 hr. The sociology of industrial relations. The factory or business firm as a social system. Formal and informal relations within the plant. Mr. Gibbard

270. Group Dynamics. (Same as Psych. 270). I. 3 hr. An interdepartmental course, combining psychological and sociological approaches, in which the dynamics of groups in operation are considered. Mr. Rankin and Mr. Silberstein

Graduate Division

Prerequisite for all courses in the "300" series: Consent of department chairman.

371, 372. Thesis. I, II. 1-6 hr. Staff

391. General Seminar. I, II. 3 hr. Staff

392. General Seminar. I, II. 3 hr. Staff

393. Seminar in Sociological Research. I, II. 3 hr. Staff

394. Seminar in Sociological Research. I, II. 3 hr. Staff

395. Seminar in Sociological Theory. I, II. 3 hr. Staff

396. Seminar in Sociological Theory. I, II. 3 hr. Staff

SPEECH

Professors Henning, Boyd, Schlanger, and Welden; Associate Professor Burrows; Assistant Professors Christensen, Davis, and Ford; Instructors Cortes, Neel, Reed, Rockenstein, Stallard, and Thomas; Instructors (part-time) Barnett and E. S. Henning.

The curriculum of the Department of Speech is so organized that a student may receive basic training in the cultural and practical aspects of any one or more of six fields of speech: (1) interpretation; (2) public address; (3) radio; (4) speech correction and audiology; (5) teaching; and (6) theatre. In all courses of training in speech skills, professional standards of achievement are emphasized.

Major Requirements. The minimum number of hours in speech courses for a major is 36, including the following required courses: 3, 6, 11, 29, 121, 140, 165, 166, 250, and 251. The 12 hours of electives taken in addition to these required courses must all be upper division. A total of 40 semester hours in Speech may be counted toward graduation. Included in the major requirements is passage of the platform test.

Platform Test. After a speech major has completed, or is completing, the basic courses (Speech 3, 6, 11, 29), he or she shall demonstrate proficiency in a 15-minute platform test at a time and place designated by the chairman of the department. Passage of this test shall be prerequisite to continued registration as a speech major. Two tests shall be the maximum allowed any student.

Suggested Distribution of Courses for A.B. Degree in Speech

FIRST YEAR				SECOND YEAR			
First Sem.	*Hr.*	*Second Sem.*	*Hr.*	*First Sem.*	*Hr.*	*Second Sem.*	*Hr.*
English 1	3	English 2	3	Language	3	Language	3
Science*	4	Science*	4	Phys. Ed. (W)	1	Phys. Ed. (W)	1
Language	3	Language	3	Mil. or Air Sci. 3	2	Mil. or Air Sci. 4	2
Speech 3	3	Speech 6	3	Speech 29	3	Speech 11	3
Mil. or Air Sci. 1	2	Mil. or Air Sci. 2	2	Hist. 52†	3	Hist. 53†	3
Phys. Ed.	1	Phys. Ed.	1	Pol. Sci. 1***	3	Pol. Sci. 2***	3
Electives**	2	Electives**	2	English 5	3	English 6	3
	16-18		16-18		16-17		16-17

THIRD YEAR				FOURTH YEAR			
First Sem.	*Hr.*	*Second Sem.*	*Hr.*	*First Sem.*	*Hr.*	*Second Sem.*	*Hr.*
Speech 165	2	Speech 121	3	Speech Elec.	6	Speech Elec.	6
Speech 166	1	Philos. 104	3	Electives	10	Electives	10
Speech 140	3	Electives	10				
Speech 250	2						
Speech 251	1						
Electives‡	7						
	16		16		16		16

*Students working toward teacher certification should take either Biol. 1 and 2 or Physical Science 1 and 2.

**Students working toward teacher certification should schedule Art 30 and Music 10.

†Students working toward teacher certification should substitute Hist. 1 and 2.

***Students working toward teacher certification should substitute Social Sci. 1 and 2.

‡Students working toward teacher certification should schedule English 18, Educ. 105, and Health Educ. 101.

Teacher Training. For students working toward certification in Speech, attention is called to the footnoted items in the above distribution of courses. Also, in the selection of their speech electives, such students should be certain to elect Speech 120, Speech 161, and Speech 162, all of which are required for certification in the field of Speech. A minimum of 36 hours in the field is needed for certification.

Forensic Activities. Intramural and intercollegiate forensics, including debate, oratory, and extemporaneous speaking, receive due attention. Speech tournaments, trips, and tours as well as campus contests are included in the program. Participation in the activities may lead to membership in Delta Sigma Rho, honorary forensic fraternity.

Theatrical Performances. The University Players, in conjunction with classes in dramatics, presents a regular program of plays which afford ample opportunity for student participation. In addition, other public and semi-public performances are scheduled to provide experience for less advanced students. Membership in Alpha Psi Omega may be earned by superior work in connection with various productions.

Radio Programs. The University Radio Theater produces, through the facilities of its professionally equipped and outfitted studios, five-minute to half-hour shows for broadcasting. Many programs are recorded and are distributed to State stations.

Off-Campus Speech Services. The Department sponsors and furnishes student programs in the form of short plays, speeches, interpretative readings, and debates for off-campus performances before women's and civic clubs, community organizations, and church groups throughout the State.

Speech and Hearing Problems. Under the direction of a speech and hearing specialist, the Department maintains a clinic for diagnosis and treatment of speech and hearing deficiencies. All University students with speech and hearing handicaps may avail themselves of the services of the clinic without additional cost.

Suggested Distribution of Courses for B.S. Degree in Speech Correction

FIRST YEAR

First Sem	*Hr.*	*Second Sem.*	*Hr.*
English 1	3	English 2	3
Lab. Sci.*	4	Lab. Sci.*	4
Foreign language	3	Foreign language	3
Psych. 1	3	Elective or Art 30 or 130	2-3
Speech 3	3	Sociol. 1	3
Mil. or Air Sci.	1 2	Mil. or Air Sci.	2 2
Phys. Ed.	1	Phys. Ed.	1
	17-19		15-17

SECOND YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
Foreign language	3	Foreign language	3
Speech 11	3	Speech 29	3
History**	3	History**	3
English 3 or 5	3	English 4 or 6	3
Elective or Music 10	2	Elective or Educ. 105	3
Mil. or Air Sci.	3 2	Mil. or Air Sci.	4 2
Phys. Ed. (W)	1	Phys. Ed. (W)	1
	16-17		16-17

THIRD YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
Speech 250	2	Speech 253	3
Speech 251	1	Speech 258	2
Speech 254	3	Speech 259	3
Speech 256	4	Speech 270	3
Speech 257	2	Psych. 125	3
Psych. 122	3	Elective	3
Elective or Educ. 106	3	English 18***	3
	18		20

FOURTH YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
Speech 252 or 255	3	Speech 272	3
Speech 277	2	Speech 271 or 273	3
Speech 268	2	Speech 278	2
Psych. 238	3	Psych. 233	3
Elective or Educ. 120	4	Elective or Educ. 127	2
Elective or Educ. 127	2	Pol. Sci. or Soc. Sci.	3-4
Pol. Sci. or Soc. Sci.	3-4	Elective or Health Ed. 101	2
	17-20		18-19

*Students working for State Certification should take Biol. 1 and 2.
**Students working for State Certification should take Hist. 1 and 2.
***To be taken only by students working for State Certification.

B.S. Degree in Audiology

Students working for the Bachelor of Science Degree in Audiology will follow the program for the B.S. Degree in Speech Correction except that in the fourth year they will select Speech 255 the first semester and Speech 271 the second semester.

Courses of Instruction

Lower Division

3. Voice and Diction. I, II. 3 hr. Drills for developing proper breath support and for producing a strong, flexible, resonant voice. Emphasis upon clarity of voice for communication. Phonetics. Voices recorded and analyzed, with corrective exercises prescribed. Open to all students. Staff

6. Acting. I, II. 3 hr. Drills for developing muscular control; for overcoming inhibitions; for rendering the body expressive of thought and emotion. Coordination of mind and body. Open to all students. Mr. Boyd and Mr. Neel

11. Public Speaking. I, II. 3 hr. PR: English 1 and 2. Study and application of principles of practical public speaking. Training in composition and effective delivery of speeches and in skills in thinking and speaking before an audience. Mr. Davis and Staff

29. Oral Interpretation. I, II. 3 hr. Development of mental and emotional responsiveness to written material. Techniques of communicating such material to others through oral reading. Open to all students. Mrs. Hardin and Mr. Neel

60. Junior Varsity Debate. I. 1-2 hr. Intercollegiate debate training and participation preparatory to varsity team debating. Open to freshmen and sophomores. Mr. Barnett

61. Junior Varsity Debate. II. 1-2 hr. Continuation of Speech 60. Mr. Barnett

75. Parliamentary Procedure. I, II. 1 hr. Study of and practice in establishing rules of order and methods of conducting meetings, assemblies, societies, etc. Mr. Welden

INTERPRETATION

Upper Division

104. Advanced Oral Interpretation. I. 3 hr. PR: Speech 29. Content and form of various types of literature and advanced techniques for their oral presentation. Mr. Neel

105. Basic Problems in Interpretation. II. 3 hr. PR: Speech 29. Designed to deal with individual problems of students in interpretation. Mr. Neel

200. Art of Storytelling. Summer Session only. 2 hr. PR: Consent. Principles involved in effective presentation of stories, with practical experience in classroom and before audiences. Stories of all types for adults and children studied. Mr. Welden

203. Professional Reading. I, II. 3 hr. PR: Speech 104 and consent. Intensive training in interpretation. Designed to meet needs of individual. Full length public recital prepared and presented. Limited enrollment. Staff

205. Advanced Problems in Interpretation. II. 3 hr. PR: Speech 29 and consent. Designed to deal with individual problems of advanced students in interpretation. Mr. Neel

PUBLIC SPEAKING

Upper Division

120. Group Discussion. I, II. 3 hr. PR: Speech 11. Theory and practice of various forms of group discussion. Principles, methods, and types of group discussions; application of contemporary problems. Mr. Welden

121. Argumentation and Debate. I, II. 3 hr. PR: Speech 11. Principles of argumentation, evidence, and reasoning, application to debating. Mr. Welden

123. Advanced Argumentation and Debate. I. 3 hr. PR: Speech 121. Primarily for varsity debaters and law students. Mr. Stallard

124. Advanced Argumentation and Debate. II. 3 hr. PR: Speech 123. Mr. Stallard

125. Advanced Public Speaking. I. 3 hr. PR: Speech 11. Techniques in composition and delivery of public speeches. Attention to parliamentary procedure. Mr. Davis

126. Speech for Business and Industry. I or II. 3 hr. Designed particularly to meet the needs of business executives, supervisors, foremen, public relations personnel, salesmen, etc. Study of and performance in public speaking, conference methods, making reports, committee work, management leadership, group controls, and personnel relationships. Mr. Davis

220. Speech Composition. II. 2 hr. PR: Speech 11 and consent. Materials of speech, organization, and style; application to delivery. Mr. Henning

221. Persuasion. I. 3 hr. PR: Speech 11 and consent. Study and practice in identification of factors motivating human behavior and belief, how to secure and hold attention, the uses of suggestion, the dramatization of ideas. Application to advertising and writing as well as speaking. Adapted to needs of pre-law and commerce students. Mr. Henning

222. Forms of Public Address. II. 2 hr. PR: Consent. Composition and delivery of the oration, political speech, speech of introduction, dedicatory address, and eulogistic speech. Mr. Welden

223. Advanced Group Discussion. II. 2 hr. PR: Consent. Application of the principles and practices of group discussion to classroom teaching, the conference tables, committee work, policy-determining groups, and the public forum. Opportunities for participation by members of the class using current national and international problems. Mr. Welden

225. Interscholastic Forensics. S. 2 hr. PR: Consent. Interscholastic public-speaking activities with emphasis upon types commonly termed original speech, such as debate, oratory, and extemporaneous speaking. Opportunity for performance in each type will be provided. Mr. Henning and Mr. Welden

Graduate Division

330. History of Rhetoric. I. 3 hr. PR: Consent. Critical study of rhetoric from classical times to the present. Mr. Henning

335. History of the American Public Address. II. 3 hr. PR: Consent. Critical study of leading American speakers, their biographies, speeches, and issues with which they dealt. Mr. Welden

339. Seminar: Problems in Speech. I, II. 3 hr. Mr. Henning

RADIO AND TELEVISION

Upper Division

140. Introduction to Broadcasting. I and II. 3 hr. Survey of the industry. The development of broadcasting, its responsibilities, and job opportunities. Organization of stations and their relation to networks. Federal regulations and

industry codes. Technical aspects of radio and television. Brief consideration of programming and production techniques. Mr. Burrows

141. Radio and Television Announcing. I and II. 3 hr. Procedures and routines of announcing in both media. Staff assignments, regulations, logged broadcasting operations, reports, and emergency procedures. Practice in reading of news and commercial copy. Mr. Rockenstein

143. Fundamentals of Radio Production. II. 2 hr. PR: Speech 140 or consent. The operation and care of studio and control-room equipment. Nontechnical study of control and transmission of all types of radio programs. Blending of sound, music, and speech in production. Students in this class will serve as production assistants for University radio programs. Lecture and laboratory. Mr. Rockenstein

144. Radio and Television Continuity Writing. I. 2 hr. Format of all types of radio and television writing except dramatic scripts. Continuity for music programs, talks, interviews, round-table discussions, forums, and variety shows. Mr. Rockenstein

145. Fundamentals of Television Production. II. 3 hr. PR: Speech 140 or consent. Elementary treatment of technical aspects. Station organization and personnel. Theory of camera operation and picture composition. Techniques of television directing and staging. Field trips to educational and commercial stations for observation. Students in this class will serve as production assistants for University television programs. Mr. Burrows

240. Radio and Television Dramatic Writing. II. 2 hr. PR: Speech 140 and 144 or consent. Dramatic script, documentaries, poetry programs, serial dramas, and children's shows for commercial and educational purposes. Scripts are written to be aimed at definite markets. Mr. Rockenstein

242. Radio Workshop. I. 2 hr. PR: Speech 140 or consent. Lecture and laboratory in analysis, casting, rehearsal, and production of talk shows, interviews, round-table forums, popular and classical music shows, variety shows. Students in this class will serve as assistants in the preparation of radio programs for the University Office of Educational Broadcasting. Mr. Rockenstein

243. Television Workshop. I. 2 hr. PR: Speech 140 or consent. Mainly laboratory experience in production of television programs. Students in this class will serve as assistants in the preparation of television programs for the University Office of Educational Broadcasting. Mr. Burrows

244. Radio and Television Program Planning. II. 2 hr. PR: Speech 140 and consent. Analysis of the purpose and basic idea of a program in relation to audience composition. Requirements of effective structure. Practice in laying out program formats for all types of radio and television programming. Mr. Burrows

Graduate Division

348. Seminar: Problems in Radio. II. 3 hr. PR: Consent. Mr. Rockenstein

349. Seminar: Problems in Television. I, II. 3 hr. PR: Consent. Mr. Burrows

NOTE: For additional courses of training for television, refer to Speech 6, Speech 162, Speech 260, Speech 261, Speech 263, Speech 264, and Speech 267.

SPEECH CORRECTION AND AUDIOLOGY

Upper Division

250. Speech Correction. I and II. 2 hr. PR: Consent. Introduction to the field of speech correction and speech therapy. Emphasis on functional disorders with special attention to articulation. Of interest to classroom teachers. For maximum benefit, Speech 251 should be taken concurrently. Mrs. Thomas

251. Speech Correction Laboratory. I and II. 1 hr. PR: Credit in Speech 250 or current enrollment, or consent. Laboratory period designed to accompany Speech 250. Identification of various speech defects stressed. Basic examining techniques practiced. Mrs. Thomas

252. Stuttering. I. 3 hr. PR: Speech 250, 251 and consent. Theories and therapies of stuttering. Mr. Christensen

253. Introduction to Audiology. II. 3 hr. PR: Consent. General orientation to the field of audiology and the specialties which are included. A survey of the problems of the hearing-handicapped, basic hearing instruments, measurement procedures, and general goals of hearing therapy. Mrs. Thomas

254. Applied Phonetics. I. 3 hr. PR: Speech 3, 250, or consent. A study of the standard speech sounds in our language. Use of symbols for recording speech sounds; application of the use of such symbols in representing various usages of speech; special emphasis on analyzing and recording defective speech. Dynamic concepts studied. Mr. Schlanger

255. Hard of Hearing Therapy. I. 3 hr. PR: Speech 272 and consent. Bases and procedures of acoustic training and speech reading. Mrs. Thomas

256. Anatomy of the Speech and Hearing Mechanism. I. 4 hr. PR: Consent. Anatomical and physiological study of the vocal mechanisms and the ear. Mr. Schlanger

*257. Clinical Practice. I. 2 hr. PR: Admittance only by consent. Supervised therapy of the severe speech and/or hearing disorders. Mrs. Thomas

*258. Clinical Practice. II. 2 hr. PR: Speech 257 and consent. Supervised therapy of profound speech and/or hearing disorders. Mrs. Thomas

259. Advanced Speech Correction. II. 3 hr. PR: Speech 250, 251, 254, 256, and consent. Study of the speech-retarded child and organically based speech disorders including cleft palate, cerebral palsy, esophageal speech, and phonation. Mr. Christensen

271. Diagnostic Audiometrics. II. 3 hr. PR: Speech 253 and consent. A study of the various pure tone and speech reception tests outlining the dimensions of hearing. Test administration and interpretation. Mr. Christensen

272. Bases of Aural Rehabilitation for Children and Adults. II. 3 hr. PR: Speech 253, 271 and consent. Study of the perceptive and behavioral problems of aurally handicapped individuals in society, and approaches to methods of alleviating and compensating for hearing loss. Mr. Schlanger

273. Profound Organic Speech Disorders. II. 3 hr. PR: Speech 259 and consent. Speech and language disorders related to cerebral injury. Emphasis on aphasia and aphasia therapeutics. Differential diagnosis of children with delayed speech and language. Mr. Schlanger

275. Speech Problems of Children. II. 3 hr. PR: Consent. Normal development of speech habits in children. Diagnostic and remedial procedures for speech defects. Relationship between speech and allied activities such as reading, spelling, and disciplinary problems. Mr. Henning

*277. Advanced Clinical Practice. I. 2 hr. PR: Speech 258. Supervised diagnostic procedures and group therapy practice in schools and clinics. Case load carried. Mr. Christensen

*278. Advanced Clinical Practice. II. 2 hr. PR: Speech 277. Supervised diagnosis and therapy of profound speech and/or hearing disorders of multiple handicapped children and adults. The emphasis will be on teamwork procedures. Mr. Christensen

*Speech 257, 258, 277, and 278 meet the requirements of Educ. 128, which is necessary for certification.

Graduate Division

350. Experimental Phonetics. I. 3 hr. PR: Speech 254 and consent. Investigation of problems of phonetics as they are related to functional speech. Instruments used in sound analysis and an investigation of various aspects of architectural acoustics. Mr. Christensen

351. Problems in Speech Pathology. II. 3 hr. PR: Consent. The speech pathologist as a diagnostician and therapist in interdisciplinary investigations. Examination of counseling procedures, administrative practices in varied settings, and organization of programs for various pathologies of speech. Mr. Schlanger

352. Advanced Speech Pathology. II. 3 hr. PR: Speech 250, 259 and consent. Theories of causation and therapies for delayed language development, cleft palate, and cerebral palsy. Mr. Christensen

353. Neuropathologies of Speech and Language. I. 3 hr. PR: Speech 250, 256, 273, or consent. Speech and language disturbances related to brain injury or maldevelopment. Consideration of the neurological bases, pathologies and psychological factors involved in the loss or lack of development of speech and language. Mr. Schlanger

357. Seminar: Problems in Audiology. II. 3 hr. PR: Speech 253, 271, 272. Topics vary from term to term to meet student needs. Emphasis will be on advanced concepts in audiological diagnosis, aural rehabilitation and noise in industry. Mr. Christensen

358. Acoustic Instrumentation. I. 3 hr. PR: Speech 253, 271. Principles of electronic design utilized in clinical auditory testing and amplification. Evaluation and assessment of hearing aids in aural rehabilitation. Mr. Schlanger

359. Seminar: Speech Pathology. I, II. 2 hr. PR: 9 hr. of speech re-education courses and consent. Mr. Schlanger

THEATER

Upper Division

160. Theatrical Make-up. I. 2 hr. Lecture-laboratory course in art of stage make-up. Practical experience provided by doing make-up for University Players productions. Mr. Ford

161. Stagecraft. I, II. 3 hr. Lecture-laboratory course in elementary problems of scenery construction, scene painting, and stage lighting. Practical experience provided on University Players productions. Mr. Reed

162. Play Directing. I. 3 hr. PR: Speech 165. Fundamentals of directing stage and television plays. Emphasis on work of director in relation to actor, stage, business, composition, movement, and rehearsal schedule. Mr. Boyd and Mr. Neel

164. Theater Workshop. I, II. 1-3 hr. Laboratory for production of University plays and informal stimulation of interest in creative arts. Open to all students. Mr. Reed

165. Theatrical Methods and Practices. I, II. 2 hr. Basic techniques and terminologies of acting, scene construction, lighting, properties, costuming, directing, and theater history. (Must accompany Speech 166 for credit.) Mr. Ford

166. Theatrical Methods and Practices Laboratory. I, II. 1 hr. Laboratory to accompany Speech 165. Participation in actual production of University Theater and Children's Theater plays. Mr. Reed

260. Advanced Acting. II. 2 hr. PR: Speech 6, Speech 165, and consent. Characterization, script analysis, style, theories, and techniques. Designed to meet needs of individual student. Mr. Boyd

*Speech 257, 258, 277, and 278 meet the requirements of Educ. 128, which is necessary for certification.

261. Theatrical Dialects. I. 2 hr. PR: Consent. Study and mastery of 12 common dialects used in theater and radio. Mr. Boyd

262. Playwriting. II. 2 hr. PR: Speech 165 and consent. Development of creative ability in dramatic composition. Study of techniques and problems of playwright. Of cultural value, but primarily a writing course. Staff

263. Scene Design. II. 2 hr. PR: Consent. Lecture and laboratory in theories of scene design for stage and television, including actual construction of designs. Open to juniors, seniors, and graduate students. Mr. Burrows

264. Advanced Play Directing. II. 2 hr. PR: Speech 162, either Speech 161 or 164, and consent. Emphasis on work of directing as an integrating artist. Display of high level of proficiency in direction of a one-act play required of all students enrolled. Mr. Boyd

265. History of Theater. I. 2 hr. PR: Speech 165 and consent. Historical survey of theater from primitive times to present. Includes both oriental and occidental theaters. Mr. Neel

267. Advanced Scenery and Lighting. I, II. 2 hr. PR: Speech 161 and consent. A more technical study of scenery and lighting problems than is offered in Speech 161. Students are given opportunity for laboratory study through independent investigation and work on University Players' productions. Mr. Burrows

268. Creative Dramatics. I. 2 hr. PR: Speech 6 or consent. The study and practice of creative dramatic activity as a method of learning and self development for children. Mr. Ford and Mr. Boyd

Graduate Division

368. Seminar Problems in Theatre. I, II. 3 hr. Consent. Mr. Boyd

Related Courses

Upper Division

170, 171, 172. Directed Speech Activities. I, II. 1-3 hr. PR: Consent of chairman of department. Chairman of department may grant credit for any extracurricular speech activity or study which is assigned to and directed by a member of the speech staff. Staff

270. Psychology of Speech. II. 3 hr. PR: 6 hr. of psychology and 18 hr. of speech. Psychological principles involved in speech situation. Analysis or roles of emotion, habit, learning judgment, rating, and imagery in speech. Mr. Henning

Graduate Division

301. Research Problems and Methods. I. 3 hr. PR: Graduate standing. Required of all candidates for Master's Degree in Speech. Mr. Henning

370. Research. I, II. 1-3 hr. PR: Speech 301, a speech seminar, and consent of chairman of department. For graduate students in speech. Mr. Henning and Staff

375. Independent Study. I, II. 1-3 hr. PR: Speech 301, a speech seminar, and consent of chairman of department. Open to graduate students in speech who are pursuing independent problems in that field. Mr. Henning and Staff

399. Thesis. I, II. 2-4 hr. Mr. Henning and Staff

The College of Commerce

The College of Commerce of West Virginia University was established by the Board of Governors of the University on November 10, 1951, and began its initial year of operation in September, 1952. Courses leading to the bachelor's and master's degrees in business administration and economics were offered for many years by West Virginia University in the Department of Economics and Business Administration, which was in the College of Arts and Sciences. In September, 1952, the Department of Economics and Business Administration became the College of Commerce.

The College of Commerce is accredited not only through the approval of West Virginia University by national and regional agencies, but also through holding full membership in the American Association of Collegiate Schools of Business. This Association is the only accrediting agency in the field of professional education for business at the collegiate level.

Objectives

The primary objective of the College of Commerce is to prepare students for careers in business and for careers that require extensive training in economics. To achieve this aim, the curricula of the College are so constructed as to provide a broad cultural background, a core group of courses in the various phases of business administration and economics, and specialization in a particular field of business administration or economics.

Undergraduate Program

Undergraduate work is undertaken in two divisions: the lower division, in which freshmen and sophomores are enrolled, and the upper division, in which juniors and seniors are enrolled. The lower-division curriculum is designed to afford students a liberal educational background and to provide a foundation for the work that follows. Students will be admitted to the College of Commerce upon completion of at least 58 semester hours of required and acceptable elective courses at a grade average of not less than "C."

In order to provide a well-rounded background in the different phases of business or economics, a core curriculum is required. These courses are: Economic Principles, Industrial Management, Business Law, Money and Banking, Accounting, Statistics, Labor Problems, Business Finance, and Marketing. (Certain exceptions are made in the Economics major option.) Since many students do not follow ultimately the careers for which they prepare in the University, this background of fundamentals should better enable them, in terms of versatility and adaptability, to meet the changing courses of their careers than does a highly specialized program. Furthermore, it affords a comprehensive educational foundation upon which specialized programs can be built.

Although narrowly specialized training is avoided, major concentration areas are offered. These permit upperclassmen to acquire a detailed knowledge of those phases that interest them particularly. The major fields of study are as follows: Accounting, Economics, Finance, Management, Marketing, and General Business.

Graduate Programs

The College of Commerce offers programs leading to the degrees of Master of Business Administration, Master of Science in Business Administration or Economics, and Master of Arts in Economics. Students in these programs register in the Graduate School. Details about these programs and requirements for graduate degrees may be found in the *Announcements* of the Graduate School.

Bureau of Business Research

The Bureau of Business Research, functioning as an integral part of the College, was organized for the purpose of undertaking research into business and economic problems—particularly those of West Virginia. This research program is undertaken by the faculty members of the College of Commerce and by other staff members, under the general supervision of the Director of the Bureau of Business Research.

Publication of a series of monographs, the *West Virginia Business and Economic Studies,* was begun by the Bureau in 1949.

Placement of Graduates

The placement committee in the College as well as all staff members will aid qualified graduates to find desirable employment. Graduates have access to the University Placement Service, which serves graduating seniors and alumni.

GENERAL INFORMATION

ADMISSION REQUIREMENTS

Regular Students

Applicants seeking admission to the College of Commerce for the purpose of obtaining a degree must have earned at least 58 semester hours in required and approved elective courses in the lower-division curriculum at a grade average of not less than "C."

Registration

Pre-Commerce freshmen and sophomores as well as juniors and seniors of the College of Commerce enroll at the beginning of each semester or term of the University.

REQUIREMENTS FOR DEGREES

Bachelor's Degree

The College of Commerce offers the degrees of Bachelor of Science in Business Administration and Bachelor of Science in Economics. Candidates for these degrees must have a minimum of 128 semester hours of work and must have satisfied the College requirements as to courses and grades ("C" or 2.0 grade-point average) in order to graduate. Credit is not allowed for English 0. A candidate for the Bachelor's Degree must earn a minimum of 30 semester hours while enrolled as a student in the College of Commerce. Candidates for degrees to be conferred at the close of the second semester must be present in person to receive their degrees unless excused by the Dean. No individual may be exempted from the provisions of this University regulation except by official action of the Board of Governors of the University. Students who expect to obtain a degree from the College of Commerce and who take work at other institutions must have their programs approved by the Dean of the College of Commerce before registering at another institution.

A Second Bachelor's Degree

A student who has earned a Bachelor's Degree in one department or college of West Virginia University may become eligible for a second Bachelor's Degree by earning a minimum of 30 semester hours which include the core curriculum courses of the College of Commerce.

Master's Degree

Under the programs leading to the degrees of Master of Science in Business Administration and Master of Science in Economics, the student's program is flexible to allow for variation in academic background and interests. Each student's program is prepared in consultation with an adviser and requires his approval. For these degrees 30 semester hours of graduate credit are required, including credit for an acceptable thesis.

The degree Master of Business Administration (M.B.A.) requires 36 semester hours of graduate credit. Of this total 24 hours are in specified courses. No thesis is required; but writing is emphasized in courses, and a comprehensive written examination must be passed prior to graduation.

These graduate programs are based on a baccalaureate degree in economics or business administration comparable to those offered at West Virginia University. Deficiencies must be removed through the completion of prerequisite courses specified by the adviser. Particularly in the M.B.A. program it is important, as a rule, that these prerequisite courses be completed prior to the start of the academic year in September.

PROGRAMS OF STUDY

LOWER DIVISION

Pre-Commerce students are expected to complete the lower-division program of study within the first two years of residence at the University. Economics 1 and 2 are prerequisite to all upper-division courses in the College of Commerce.

FRESHMAN YEAR

Courses	*Hr.*
English 1 and 2	6
History 1 and 2 or Humanities 1 and 2	6 or 8
Laboratory Science[1]	8
Mathematics 3	3
Mil. or Air. Sci. 1 and 2	4
Phys. Ed. (General Program)	2
Electives (Men)[2]	3 or 5
Electives (Women)[2]	7 or 9
TOTAL	34

SOPHOMORE YEAR

Courses	*Hr.*
Accounting 1 and 2	6
English 18	3
Economics 1 and 2	6
Speech 11	3
Hist. 52 or Pol. Sci. 2	3
Mil. or Air Sci. 3 and 4	4
Phys. Ed. (General Program) (W)	2
Electives (Men)[2]	6
Electives (Women)[2]	8
TOTAL	31

UPPER DIVISION

Accounting

The accounting program is designed to prepare students for public accounting, and for positions as accountants in business, industry, and government.

JUNIOR YEAR

Courses	*Hr.*
Intermediate Accounting (Accounting 111 and 112)	6
Cost Accounting (Accounting 115)	3
Business Law (Bus. Law 111 and 112)	6
Statistics (Economics 125)	3
Business English (English 123)	3
Business Finance (Finance 111)	3
Industrial Management (Mgmt. 111)	3
Electives (Non-Commerce)	6
TOTAL	33

SENIOR YEAR

Courses	*Hr.*
Advanced Accounting (Accounting 113)	3
Auditing Theory (Accounting 217)	3
Money and Banking (Econ. 111)	3
Labor Problems (Econ. 115)	3
Principles of Marketing (Mrkt. 111)	3
Electives (Commerce)[3]	9
Electives (Non-Commerce)	3
Electives (Unrestricted)	3
TOTAL	30

Electives

Students should use the electives in their entire four-year program to develop some depth in different fields of knowledge. Therefore, the student is not permitted to apply toward his degree more than nine hours of isolated courses taken outside the College of Commerce. An isolated course is one which is the only course taken by the student with the same field designation (for example, English, History, or Philosophy). Non-Commerce electives in the various curricula in the College of Commerce must be approved by the adviser from among upper-division courses offered by a school other than the College of Commerce.

Economics

This program is designed for those who wish to emphasize economics in their training for business; for those who wish to undertake graduate work for an advanced degree; for those who wish to enter government service; and for those who wish to teach.

JUNIOR YEAR	
Courses	*Hr.*
Money and Banking (Econ. 111)	3
Labor Problems (Econ. 115)	3
Statistics (Economics 125)	3
Economic Theory (Economics 221)	3
Business English (English 123)	3
Business Finance (Finance 111)	3
Electives (Commerce)	6
Electives (Non-Commerce)	6
Electives (Unrestricted)	3
Total	33

SENIOR YEAR	
Courses	*Hr.*
History of Economic Thought (Economics 222)	3
Business Cycles (Economics 235)	3
Public Finance (Economics 241)	3
Electives (Commerce)	12
Electives (Non-Commerce)	6
Electives (Unrestricted)	3
Total	30

Finance

This program is designed to meet the needs of those students who plan to enter government service or to become associated with the financial or insurance departments of banks or of commercial and industrial organizations.

JUNIOR YEAR	
Courses	*Hr.*
Business Law (Bus. Law 111 and 112)	6
Money and Banking (Economics 111)	3
Statistics (Economics 125)	3
Business English (English 123)	3
Business Finance (Finance 111)	3
General Insurance (Finance 115)	3
Industrial Management (Mgmt. 111)	3
Principles of Marketing (Mrkt. 111)	3
Electives (Non-Commerce)	6
Total	33

SENIOR YEAR	
Courses	*Hr.*
Labor Problems (Economics 115)	3
Business Cycles (Economics 235)	3
Public Finance (Economics 241)	3
Investments (Finance 150)	3
Electives (Commerce)	12
Electives (Non-Commerce)	3
Electives (Unrestricted)	3
Total	30

[1]A laboratory science may be chosen from Biology, Chemistry, Physics, Botany, Zoology, Psychology, Geology, or Physical Science.

[2]Elective courses chosen from the following departments are recommended: English, History, Humanities, Mathematics, Philosophy, Political Science, Psychology, Sociology, Speech, or Foreign Language. Students who select a foreign language must complete 6 hours in the same language at the University. Credit is not allowed for English 6.

[3]Students may apply toward the baccalaureate degree no more than 9 hours of elective accounting courses.

Management

This program is designed to prepare students for the many types of positions in management, especially those in production and in industrial relations. Although it does not provide technical training for the several types of positions in the field of management, it does provide a foundation upon which specialized training can be developed.

JUNIOR YEAR

Courses	*Hr.*
Business Law (Bus. Law 111 and 112)	6
Money and Banking (Economics 111)	3
Labor Problems (Economics 115)	3
Statistics (Economics 125)	3
Business English (English 123)	3
Business Finance (Finance 111)	3
Industrial Management (Mgmt. 111)	3
Principles of Marketing (Mrkt. 111)	3
Electives (Non-Commerce)	6
TOTAL	33

SENIOR YEAR

Courses	*Hr.*
Production Management (Mgmt. 112)	3
Personnel Management (Mgmt. 216)	3
Business Policy (Mgmt. 225)	3
Marketing Management (Mrkt. 112)	3
Electives (Commerce)	12
Electives (Non-Commerce)	3
Electives (Unrestricted)	3
TOTAL	30

Marketing

This program is designed to prepare students for positions in the field of distribution. The required and suggested courses include work in the areas of sales management, sales promotion and advertising, marketing research, and procurement as carried on by manufacturing, wholesaling, and retailing establishments.

JUNIOR YEAR

Courses	*Hr.*
Business Law (Bus. Law 111 and 112)	6
Labor Problems (Economics 115)	3
Statistics (Economics 125)	3
Business English (English 123)	3
Business Finance (Finance 111)	3
Industrial Management (Mgmt. 111)	3
Principles of Marketing (Mrkt. 111)	3
Marketing Management (Mrkt. 112)	3
Electives (Non-Commerce)	6
TOTAL	33

SENIOR YEAR

Courses	*Hr.*
Money and Banking (Economics 111)	3
Principles of Retailing (Mrkt. 115)	3
Principles of Advertising (Marketing 120)	3
Business Policy (Management 225)	3
Electives (Commerce)	12
Electives (Non-Commerce)	3
Electives (Unrestricted)	3
TOTAL	30

General Business

A student selecting the General Business Program has a wider choice of electives than does one who selects a more specialized program. This curriculum is recommended to those who have not decided upon a specialized field of study but who desire a well-integrated program in Business Administration.

JUNIOR YEAR

Courses	*Hr.*
Business Law (Bus. Law 111 and 112)	6
Money and Banking (Economics 111)	3
Labor Problems (Economics 115)	3
Statistics (Economics 125)	3
Business English (English 123)	3
Business Finance (Finance 111)	3
Industrial Management (Mgmt. 111)	3
Principles of Marketing (Mrkt. 111)	3
Electives (Non-Commerce)	6
TOTAL	33

SENIOR YEAR

Courses	*Hr.*
General Insurance (Finance 115)	3
Personnel Management (Mgmt. 216)	3
Electives (Commerce)	15
Electives (Non-Commerce)	6
Electives (Unrestricted)	3
TOTAL	30

COURSES OF INSTRUCTION

ACCOUNTING*

1. Principles of Accounting. I, II. 3 hr. PR: Sophomore standing. The fundamentals of accounting for business enterprises: the accounting cycle, journals and ledgers, working papers, statements. Staff

2. Principles of Accounting. I, II. 3 hr. PR: Accounting 1. Further study of the accounting process with emphasis on assets, liabilities, and net worth; manufacturing accounts; analysis of financial statements. Staff

111, 112. Intermediate Accounting. I, II. 3 hr. per sem. PR: Accounting 2. Analysis of accounting theory and practice as applied to business firms; assets valuation, liabilities, income determination. Mr. Vincent

113. Advanced Accounting. II. 3 hr. PR: Accounting 112. Accounting for partnerships, consolidations, installment sales, consignments, receiverships, reorganizations, branches, foreign exchange, and estates and trusts. Mr. Johnson

115. Cost Accounting. I. 3 hr. PR: Accounting 2. Fundamentals of cost determination with emphasis on the significance of cost data and their interpretation; process, job-order, and standard costs. Mr. Dennler

213, 214. Income Tax Accounting. I, II. 3 hr. per sem. PR: Accounting 112. Tax theory and practice as developed from regulations of the Internal Revenue Service; problems in preparation of tax returns for individuals, partnerships, and corporations. Mr. Skaggs

216. Advanced Cost Accounting. II. 3 hr. PR: Accounting 115. Advanced work in the application of cost theory and procedures to cases and problems, which emphasize the managerial use of cost information. Mr. Dennler

217. Auditing Theory. I. 3 hr. PR: Accounting 112. Auditing fundamentals; objectives, standards and procedures; introduction to working-paper techniques; procedure statements of the American Institute of CPA's. Mr. Vincent

218. Auditing Practice. II. 3 hr. PR: Accounting 217. Application of auditing theory and procedures, with emphasis on decisions which involve judgment and are important in independent audits; audit working papers and reports; case studies. Mr. Skaggs

220. Accounting Systems. I. 3 hr. PR: Accounting 112. The adaption of accounting procedures to the demands of the firm, with emphasis on theoretical factors important to efficiency and internal control; system surveys and reports, the design of forms, office machine applications. Mr. Dennler

224. Advanced Accounting Problems. II. 3 hr. PR: Minimum of 18 hours in accounting with an average grade of "B" or higher. Analysis and solution of representative C.P.A. problems. Mr. Vincent

230. Advanced Accounting Theory. II. 3 hr. PR: Accounting 112, 115, and consent. A critical analysis of accounting concepts and standards with emphasis on their origin, development, and significance. Mr. Vincent

301. Managerial Control. II. 3 hr. PR: Economics 125. The use and significance of the quantitative techniques of accounting, statistics, and budgeting for planning, control, and decision making. Mr. Dennler

331, 332. Thesis. I, II. 2 or 3 hr. Staff

*Economics 2 is a prerequisite to all upper-division courses.

BUSINESS LAW*

111. Business Law. I, II. 3 hr. The study of certain aspects of contract and tort law with special emphasis on the nature of law and the American judicial system and the interaction and interrelationship of law, morals, cultural values, and social responsibilities of businessmen. Mr. Hartzler

112. Business Law. I, II. 3 hr. PR: Business Law 111. An intense study of the nature of law and its functions with special reference to contracts, torts, sales, negotiable instruments, and credit transactions. Economics and law, social consequences of court decisions, and theories and philosophies of law are also emphasized. Mr. Hartzler

ECONOMICS*

1. Principles of Economics. I, II. 3 hr. PR: Sophomore standing. Organization and principles of economic activity. Staff

2. Principles of Economics. I, II. 3 hr. PR: Economics 1. A continuation of Economics I. Staff

111. Money and Banking. I, II. 3 hr. Our system of monetary and banking arrangements, viewed in relation to functioning of the economic system as a whole. Mr. Fishman

115. Labor Problems. I, II. 3 hr. An introduction to labor economics and labor relations in industry, including the interaction of economic forces, union policies, personnel practices, and labor law. Mr. Stocks

125. Statistics. I, II. 3 hr. PR: Math. 2 or 3. Methods of collecting, presenting, analyzing, and interpreting business data, with special emphasis on the analysis of frequency distribution, trend fitting, seasonal corrections, forecasting, and index numbers. A two-hour laboratory session is required in this course. Mr. Braff

205. Current Economic Problems. S. 3 hr. PR: Economics 1 and 2 or consent. For students in Education only. A course designed to acquaint public school teachers with reliable source material in economics and to instruct them in studying current economic problems. Mr. Campbell

209. Problems in Economics. I, II. 1-3 hr. Staff

210. Comparative Economic Systems. II. 3 hr. Structure and processes of existing economic systems throughout the world including review of basic principles of free enterprise, socialistic, communistic, and fascistic societies. Comprehensive analysis based on current and recent experiments in these economies. Mr. Mischaikow

217. Trade Unionism. I. 3 hr. PR: Economics 115 or consent. An analysis of the structure, government, attitudes, and policies of organized labor; the implications of union policy. Mr. Gavett

218. Collective Bargaining. II. 3 hr. PR: Economics 115 or consent. Theory and practice of collective bargaining; including contract issues, types of relationships, and the role of government policy. Mr. Gavett

219. The Economics of Wages and the Labor Market. II. 3 hr. PR: Economics 115 or consent. The determination of wage levels and structure; the functioning and organization of labor markets. Mr. Gavett

221. Economic Theory. I. 3 hr. Training and experience in use of analytical methods and techniques needed in dealing with fundamental economic problems. Mr. Braff

222. History of Economic Thought. II. 3 hr. Economic ideas in perspective of historic development. Mr. Thompson

*Economics 2 is a prerequisite to all upper-division courses.

225. Transportation. I. 3 hr. Development of an inland transportation system and relations and policies of transport agencies. Mr. Campbell

230. Public Utilities. II. 3 hr. Development of regulation; economics of valuation and rate making. Mr. Campbell

235. Economic Growth and Business Cycles. I. 3 hr. PR: Economics 125 or consent. Industrial fluctuations; causes and possible remedies. Mr. Fishman

241. Public Finance. I. 3 hr. Governmental fiscal organizations and policy; taxes and tax systems with particular emphasis upon the Federal Government and the State of West Virginia. Mr. Alvis

245. Government and Business. II. 3 hr. Government in its role of adviser and umpire; analysis of governmental policies and practices affecting business. Mr. Newhouse

250. International Trade. II. 3 hr. PR: Consent. Development of trade among nations; theories of trade; policies; physical factors; trends; and barriers. Mr. Alvis

256. Advanced Statistics. II. 3 hr. PR: Economics 125 or equivalent. Correlations, index numbers, time series analysis, statistical inference, and population forecasting. Mr. Braff

301. Managerial Economics. I. 3 hr. An analysis of markets and the problems of management in appraising business conditions and in adjusting to changes in production demand, costs, level of output, and profits. Staff

302. Research and Reports. I. 3 hr. A study of sources of business information and research procedures, with application in the preparation of reports. Mr. Coleman

310. Contemporary Economic Theory. II. 3 hr. PR: Economics 221. Recent developments in economic theory such as those relating to imperfect competition, monetary problems, and collectivist economy. Staff

315. Bibliography and Research. I. 2 hr. Sources of information; research procedures; analysis and interpretation of data; preparation of manuscripts. Mr. Coleman

319. Seminar in Economics. II. 3 hr. Mr. Fishman

331, 332. Thesis. I, II. 2 or 3 hr. Staff

FINANCE*

111. Business Finance. I, II. 3 hr. PR: Accounting 1 and 2 or consent. Legal and economic aspects of business formation, operation, and readjustment; social control of business activity. Mr. Newhouse

115. General Insurance. I, II. 3 hr. Theory of risk and its application to insurance; principles underlying all forms of insurance — life, property, casualty, fire, and surety. Mr. Wright

120. Life Insurance. I. 3 hr. PR: Finance 115. Principles of life-insurance protection; legal regulation of insurance companies. Mr. Wright

150. Investments. II. 3 hr. PR: Finance 111 or consent. Investment analysis and management for the individual and the firm. Mr. Newhouse

161. Real Estate. II. 3 hr. Principles and practices of real estate business. Mr. Wright

216. Casualty Insurance. II. 3 hr. PR: Finance 115. An analysis of liability, automobile, accident and health, workmen's compensation, and other casualty cover-

*Economics 2 is a prerequisite to all upper-division courses.

ages. The forms and operations of casualty carriers, theories and methods of rating the casualty lines, and insurance regulation as it affects casualty coverages. Mr. Wright

217. Property Insurance. I. 3 hr. PR: Finance 115. An analysis of fire, marine, and inland marine insurance with particular reference to the theories of underwriting used in these lines. The case method of study is utilized. Mr. Wright

313. Financial Administration. II. 3 hr. PR: Finance 111. A study of problems in business finance including those related to the financial structures of corporations and the working-capital and fixed-capital needs of a firm. Mr. Newhouse

331, 332. Thesis. 2 or 3 hr. Staff

MANAGEMENT*

111. Industrial Management. I, II. 3 hr. The assignment of managerial personnel to the specialized activities, location and lay-out of manufacturing plants, standardization and simplification of equipment and processes, procurement, issue and storage of material, production cost and labor efficiency, planning and scheduling of operations. Mr. Hamelman

112. Production Management. I, II. 3 hr. PR: Management 111. The management and administration of manufacturing and production activities with the proper coordination and control of them to achieve production goals. Mr. Hamelman

213. Problems in Business Administration. I, II. 1-3 hr. Staff

216. Personnel Management. I, II. 3 hr. PR: Economics 115. Principles and practices in the direction, coordination, and remuneration of manpower. Mr. Isaack

225. Business Policy. II. 3 hr. PR: Senior standing and consent. Integrated study of policies, organization, facilities, and control techniques of business enterprises. Mr. Coleman

301. Administrative Practices. I. 3 hr. PR: Management 111. A study of the function of supervision and the problem of human relationships in complex situations. Mr. Isaack

313. Production Administration. II. 3 hr. PR: Management 111. A study of the problems of planning, organizing, and controlling manufacturing activities as a background for the analysis of complex management problems. Mr. Hamelman

323. Seminar in Business Policy. II. 3 hr. PR: Consent. An integrated study of policies, organization, facilities, and control techniques of business enterprises. Mr. Coleman

331, 332. Thesis. I, II. 2 or 3 hr. Staff

MARKETING*

111. Principles of Marketing. I, II. 3 hr. Principles, policies, and practices followed by producer, wholesaler, and retailer in distribution of commodities to consumers. Mr. Haas

112. Marketing Management. I, II. 3 hr. PR: Marketing 111. Formation of marketing policies; organization and management of sales activities. Mr. Haas

115. Principles of Retailing. I, II. 3 hr. PR: Marketing 111. Organization, administration, merchandising, operations, promotional activities, and retailing mathematics Mr. Crooks

120. Principles of Advertising. I, II. 3 hr. PR: Marketing 111 and 112. Introduction to principles and practices of advertising, including preparation of complete advertising campaign. Mr. Roberts

*Economics 2 is a prerequisite to all upper-division courses.

210. Industrial Purchasing. I. 3 hr. PR: Marketing 111. A survey of corporate procurement problems facing modern purchasing executives. Mr. Roberts

215. Marketing Research. II. 3 hr. PR: Consent. The utilization of present-day marketing research techniques in the solution of practical marketing problems, with particular reference to West Virginia. Mr. Roberts

313. Marketing Administration. I. 3 hr. PR: Marketing 111. The analysis of problems met by management in distribution goods and services efficiency to consumers. Mr. Crooks

331, 332. Thesis. I, II. 2 or 3 hr. Staff

The College of Education

GENERAL INFORMATION

In 1901 a department of Education was established in the College of Arts and Sciences of West Virginia University. Subsequently, departments of education evolved in the College of Engineering and the School of Music. In 1927, the College of Education was established by the Board of Governors of the University to unify professional training for school service.

Through its undergraduate and graduate courses, its seminars, its laboratory school, its cooperating public schools, its field services, and its encouragement and direction of educational investigation, the College of Education aims to contribute to educational efficiency by inculcating a liberal and more scientific conception of the functions of public schools and by providing the professional training of elementary-school and secondary-school teachers, principals, and supervisors, general school administrators, college teachers, educational counselors, and educational research specialists.

The College of Education comprises the College with its resident courses of instruction and its facilities for research; University High School with its opportunities for observation, student teaching, directed supervision, and experimentation; and cooperating public schools for supervised student-teaching experience.

The College of Education is accredited by the National Council for Accreditation of Teacher Education for the preparation of elementary teachers, secondary teachers, school service personnel and school administrators, with the Doctor's Degree as the highest degree approved.

Teacher Placement

The University maintains a general placement service for all students and alumni who are candidates for positions suitable to their preparation. Anyone who is a candidate for a school position will upon application be furnished registration blanks of the placement service. All requests for candidates will be referred to that service.

Admission to the College of Education

The requirements for admission to the University College of Education are: (a) graduation from a first-class high school with University entrance requirements satisfied, and (b) 58 semester hours of approved college work with an average of at least two grade points per credit hour on all work presented. Students in other colleges or universities who contemplate transferring to the College of Education should so order their courses of study so as to meet junior standing and should be fulfilling the curricular requirements for the certification of teachers.

Orientation and Selection

To assist students in choosing a career in the area of teaching and to maintain adequate standards for admission to teacher-training, the College of Education requires all students pursuing teacher-education programs to participate in and complete satisfactorily the Orientation and Selection Program. The student is enrolled in this program concurrently with the first course taken in the College of Education. The transfer student who has completed the first course in Education at another institution is required to complete the requirements of the Orientation and Selection Program at West Virginia University.

Adviser

When the student enters the College of Education he is assigned an adviser from the College. The student will plan his program of work—required courses, electives,

examinations, conference courses, etc.—in consultation with his adviser. Although the adviser desires to be helpful, this does not absolve the student from becoming familiar with all pertinent regulations and planning his program of work in accordance with the objective of his choice.

West Virginia Board of Education Regulation for Certification of Teachers

The West Virginia Board of Education requires that 100 semester hours of the 128 required for certification shall be completed in regularly scheduled campus courses. The 28 hours of permissible nonresidence courses may be earned by extension, home study (correspondence), radio, television, special examinations, and/or military service. Eighteen of the 28 hours may be applied to a Second Class Temporary Elementary Certificate and 12 hours to a Third Class Temporary Elementary Certificate. Any teacher who may be penalized by the revised ruling because of credits earned before June 1, 1954 may be certified under present regulations.

Maximum Work

Students may not, without special permission, register in the College of Education for more than 18 hours during any semester and 6 hours during any summer term. Any student who desires to do irregular work, or to carry more than the prescribed maximum number of hours, must obtain written permission from his adviser and the Scholarship Committee of the College. This permit is not valid until it has been filed with the Registrar.

Method of Computing Grade-Point Average for Certification

For teacher certification, effective June 5, 1956, the student is responsible for every registration in a course. The grade-point average is computed on all work attempted, including work attempted at the University and at other institutions of collegiate grade.

To be eligible for recommendation for the degrees of Bachelor of Science in Secondary Education and Bachelor of Science in Elementary Education, a candidate must:

1. Comply with the general regulations of the University concerning entrance, advanced standing, classification, examination, marks, grade points, etc.
2. Satisfy the General Requirements for Certification.
3. Complete the required courses and the minimum number of hours of approved elective courses in Education.
4. Select and pursue two teaching fields for the B.S. Degree in Secondary Education and two minor teaching fields for the B. S. Degree in Elementary Education.
5. Adhere to the patterns prescribed in completing the teaching fields.
6. Present 128 hours of approved college credit, with a general average of "C" as described under General Requirements for Certification. The candidate must have completed 26 hours after enrolling in the College of Education.
7. Be at least 18 years of age, of good moral character, interested in educational work, and mentally, physically, and otherwise qualified to perform the duties of a teacher.

Fulfillment of the requirements for graduation from the College of Education of West Virginia University qualifies a candidate to apply for recommendation for a West Virginia Professional Certificate.

General Requirements For Professional (First Class) Certificates

In order to teach in the public schools of West Virginia, one must hold a certificate issued by the West Virginia State Department of Education. Before any West Virginia University applicant is eligible to receive a Professional Certificate he

must have: (1) met the minimum State requirements, (2) met the University degree requirements, and (3) been recommended by the Dean of the College of Education as herein prescribed.

The College of Education will inform each of its students who is a prospective teacher, and any other prospective teacher, upon request, of the requirements for certification, and assist him in preparing a program of study to meet these requirements. It is the obligation of the student who desires such counsel to arrange a conference some time before the end of the sophomore year.

A candidate for certification is required to achieve a grade-point average of 2.0 ("C") or better as follows: (1) on the total of college credits earned; (2) on the hours earned in Education; (3) in student teaching; and (4) in each of the teaching fields required for all teaching certificates.

The Dean of the College of Education recommends candidates for Professional Certificates only after the completion of work for the baccalaureate degree. To be eligible for recommendation by the University for any West Virginia Professional Certificate, the applicant must have done student teaching under the supervision of the College of Education.

At least 45 semester hours of upper-division work, West Virginia University standards, are required for all teaching certificates. The qualifications herein prescribed are minimum, not optimum or maximum, and must be met by all candidates.

GENERAL SUBJECT-MATTER AND EDUCATION REQUIREMENTS FOR PROFESSIONAL CERTIFICATES VALID FOR FIVE YEARS

Required Courses	*Professional Grades 1-9*	*Professional Grades 7-12*	*Professional Grades 1-12 Music & Speech*
English and Speech	*Hr.*	*Hr.*	*Hr.*
Written and Spoken English English 1, 2	6	6	6
Advanced Written and Spoken English English 18	3	3	3
Study and Appreciation of Literature English 5 or 6 (American)	3)	3)	3)
OR	or	or	or
English 3 or 4 (English)	3)	3)	3)
Backgrounds of (Child) Literature Library Science 203	3		
Speech			
Speech 3 (Voice and Diction) or	3		
Speech 11 (Public Speaking)	3		
Minimum Requirement	18	12	12
Social Science			
Development of Social Institutions History 1, 2	6)	6)	6)
OR	or	or	or
Humanities 1, 2	8)	8)	8)
Fundamental Social Problems Social Science 1, 2	8	8	8
American History; History 52, 53	6		
West Virginia History; History 150	3		
Geography Geog. 107 (Introductory) or Geog. 109 (Econ.)	3		
Minimum Requirement	26-28	14-16	14-16

Required Courses	*Professional Grades 1-9*	*Professional Grades 7-12*	*Professional Grades 1-12 Music & Speech*
Science and Mathematics	*Hr.*	*Hr.*	*Hr.*
General Biology 1, 2		8)	8)
OR		or	or
Physical Science 1, 2 (general)		8)	8)
General Biology 1, 2, AND			
Physical Science 1			
OR			
Physical Science 1, 2 AND			
Biology 1	12		
Conservation			
Forestry 140	3		
Mathematics for Teachers			
Arithmetic 6	3		
Minimum Requirement	18	8	8
Music			
Music in Human Relations			
Music 10	2	2	2
Music as an Art and Science			
Music 11	2		
Music Materials and Procedures			
Music 12	2		
Minimum Requirement	6	2	2
Art			
Art Appreciation			
Art 30 or 130	2	2	2
Creative Expression in the Fine Arts: Art 1	2		
Creative Expression in the Applied Arts: Art 2	2		
Minimum Requirement	6	2	2
Physical Well-Being			
Orientation in Physical Education			
For Men, Physical Education 1, 2	0	2	2
For Men, Physical Education 1, 2, 43	4	0	0
For Women, Physical Education			
P.E. 3: 3 hr. from 4 to 25, 101, 102	0	4	4
For Women, Physical Education 41, 42, 43	4	0	0
Health Education 101	2	2	2
Minimum Requirement	6	4-6	4-6

(Even if the Physical Education requirement for graduation from the University has been waived because of a special permit from the University Health Service, two semester hours in Physical Education are required of an applicant for a Professional Certificate, Grades 7-12, or for a Professional Certificate, Grades 1-12, and four semester hours of Physical Education are required of an applicant for a Professional Certificate, Grades 1-9).

Professional Education	*Hr.*	*Hr.*	*Music* *Hr.*	*Speech and Hearing Therapy* *Hr.*
Human Growth and Dev., Ed. 105, 106	6	6	6	6
Stu. Teaching, Sec. Sch., Ed. 124		6		
Stu. Teaching, Sec. Sch., Music, Ed. 125			4	
Prin. of Teaching, Sec. School, Ed. 120		4	4	4
Material and Methods, Sec. School Ed. 150-170		2	2	
Approved Electives in Sec. Ed.		2		
Stu. Teaching, El. Sch. Music, Ed. 115			2	
Mat. and Methods, Elem. School Music, Ed. 130			2	
Mat. and Methods in Public School Speech and Hearing Therapy, Grades 1-12, Ed. 127				4
Clinical Practices in Public School Speech and Hearing Therapy, Grades 1-12, Ed. 128				8
Psy. and Management, El. Sch., Ed. 141	2			
Reading in El. Sch., Ed. 142	2			
Arith. in El. Sch., Ed. 143	2			
Social Studies in El. Sch., Ed. 144	2			
Science in El. Sch., Ed. 145	2			
Student Teaching in El. Sch., Ed 146	6			
Electives in Education	2			
Minimum Requirement	24	20	20	22

(NOTE: To be recommended by the University for any Professional Certificate, students shall complete a minimum of 8 semester hours in student teaching and methods at the University.)

PROGRAMS FOR PROFESSIONAL CERTIFICATES, GRADES 1-9

Requirements for the Degree of Bachelor of Science in Elementary Education and for Recommendation for the Professional Certificate, Grades 1-9

Foundation: Lower-Division Work

In preparation for admission to the College of Education and the work of preparing for teaching in elementary schools, students will register the freshman and sophomore years in the College of Arts and Sciences and pursue the program of general education that the State Board of Education has prescribed for all students who seek recommendation for teaching certificates. This program of prescribed work is included in the "Curriculum for Professional Certificates, Grades 1-9."

Training: Upper-Division Work

Admission: For admission to the prescribed courses in Elementary Education (Educ. 141, 142, 143, 144, 145, 146, and 147), including the noncredit Conference courses, students shall register the final two years in the College of Education.

Subject Matter: In lower-division work students should pursue the lower-division required courses, so that the greatest possible number of hours taken during the junior and senior years may be courses giving upper-division credit.

Graduation and Certification Requirements: To become eligible for recommendation for the degree of Bachelor of Science in Education and for the Professional Certificate, Grades 1-9, the student must complete the required curriculum and plan of work with a grade-point average of 2.0 ("C") or better, as follows: (1) on the total

of college credits earned; (2) on the hours earned in Education; (3) in each of two teaching fields; and (4) in student teaching; and have been enrolled in the College of Education for at least 26 semester hours of work, including a minimum of 8 semester hours in student teaching and methods taken at the University.

(NOTE: If, because of credits earned before June 1, 1950, in partial fulfillment of the requirements for an elementary certificate, a teacher with three or more years of elementary experience prior to the date he applies for certification would be penalized by having to meet the requirements in full, as described on pages 8 and 9 of the State Certification Bulletin, he may qualify provided he has made every possible effort to meet the requirements in full and has taken no electives since June 1, 1950, until or unless all courses prescribed in said pages 8 and 9 for the desired certificate have been taken.) (State Certification Bulletin).

REQUIREMENTS FOR MINOR TEACHING FIELDS

Since this certificate is valid in the junior high school, grades 7-9, students must complete the requirements in two teaching fields. A minimum of 18 hours (15 hours in mathematics) of work prescribed for a high school teaching field is required in each field. Below are listed the general categories of work for each field. For each teaching field suggested University courses to implement the State recommendations of a minor teaching field are listed. The listed courses have been suggested by the departments concerned and approved by the College of Education. However, these suggestions should be regarded as guides rather than stringent limitations. It should be borne in mind, however, that any deviation from the recommended courses must still conform to the listed general categories.

Art—(Drawing, design, and painting.)	*Hr.*
Art 111, Drawing	3
Art 121-122, Design	6
Art 113, Painting	3
Art 126, Modeling	2
Art 220, Theory	2
or	
Art 225, Theory	3
Art 105 or 106, History	3

Commerce—(Typewriting, shorthand, and accounting.)

English—(Composition and Literature, English and American.)

Required:	
Eng. 3, Survey: English Literature	3
Eng. 4, Survey: English Literature	3
Eng. 5, American Literature	3
Eng. 6, American Literature	3
Remaining hours from following list:	
Eng. 138, English Literature, 1660-1744	3
Eng. 139, English Literature, 1744-1798	3
Eng. 140, Elizabethan Poetry and Prose	3
Eng. 141, Literature of the Seventeenth Century	3
Eng. 142, Shakespeare	3
Eng. 166, American Fiction	3
Eng. 173, Poetry	2
Eng. 175, The Short Story	2
Eng. 249, The Romantic Movement	3
Eng. 250, American Romanticism	3
Eng. 258, Victorian Prose	3
Eng. 270, American Poetry	3

Foreign Language—(Composition, grammar, and literature.)

General Science—(General biological science and general physical science, chemistry or physics.)

Phys. Sci. 1, Introductory General Course	4
Phys. Sci. 2, Introductory General Course	4
Biol. Sci. 1, Introductory General Course	4
Biol. Sci. 2, Introductory General Course	4
Astronomy 106, Descriptive Astronomy	3

Home Economics—(Foods and nutrition, textiles and clothing.)

H. Ec. 1, Elementary Nutrition	2
H. Ec. 2, Elementary Clothing	2
H. Ec. 15, Food Selection and Preparation	4
H. Ec. 17, Textiles	3
H. Ec. 106, Child Development	3
H. Ec. 114, Management of Family Living	2
H. Ec. 134, Principles of Home Management	2

Industrial Arts—(Mechanical drawing, general shop, and organization of industrial arts.)

The Department of Industrial Arts makes no recommendation for a minor teaching field including fewer hours than the 24 hours required for the "Other Teaching Field" in Industrial Arts.

Mathematics—(College algebra.)

Math. 3, College Algebra	3
Math. 4, Plane Trigonometry	3
Math. 5, Analytic Geometry	4
Math. 107, Calculus	4
Math. 108, Calculus	4

(NOTE. Solid Geometry, ½ unit (or 1 unit of integrated geometry) is required. Advanced placement examinations may permit a student who has 1½ units or more of high school algebra to omit Math. 3, and a student who has ½ unit of trigonometry in high school to omit Math 4).

Music—(Theory and applied music.)

Music 150, Applied Music (including at least 1 hour in Voice and 1 hour in Piano)	4
Music 1, Theory	4
Music 100, 102, 103, 105, Band, Orchestra, Chorus	2
Music 140, History of Music	3
Music 183, Conducting	2
Music 182, Music Education (secondary)	3

Physical Education—(Health problems for the school child and organization and administration of health and physical education.)

	Men	*Women*
Phys. Ed. 278, Administration of Physical Education	3	3
Health Ed. 101, The School Health Program	2	2
Phys. Ed. 31-32, Team Sports	0	2
Phys. Ed. 53, Junior and Senior High School Activities and Games	2	0
Phys. Ed. 51, Fundamentals of Baseball and Gymnastics	2	0
Phys. Ed. 61, Stunts, Tumbling, and Trampoline	0	1
Phys. Ed. 132, Folk Dancing	1	1
Safety Ed. 127, Accident Prevention and First Aid	2	2
Phys. Ed. 71, Orientation in Physical Education	2	2
Phys. Ed. 177, History and Principles of Physical Education	3	3
Suggested Electives:		
Phys. Ed. 5, Ballroom Dance	1	1
Phys. Ed. 14, Elementary Swimming and Diving	0	1

Phys. Ed. 35, Modern Dance Technique	0	1
Phys. Ed. 52, Advanced Swimming, Life Saving, and Water Safety	1	0
Phys. Ed. 54, Individual and Dual Sports	2	2
Recreation 4, Recreation and the School	3	3

Social Studies—(American history and world geography.)

Speech—(Fundamentals of speech, voice, and diction, play directing, and speech correction.)

Speech 3, Voice and Diction	3
Speech 6, Acting	3
Speech 11, Public Speaking	3
Speech 29, Oral Interpretation	3
Speech 162, Play Directing	3
Speech 250, 251, Speech Correction	3

Teacher-Librarian—(Cataloguing and classification, book selection, and reference and bibliography.)

Lib. Sci. 101, Reference and Bibliography	3
Lib. Sci. 203, Library Materials for Children	3
Lib. Sci. 205, Selection of Books and Related Materials for Young People	3
Lib. Sci. 207, School Library Organization and Administration	3
Lib. Sci. 222, Field Practice	3
Lib. Sci. 223, Cataloguing and Classification	3

(NOTE: A minor teaching field may be added to a Professional Certificate, Grades 7-12, by completing the requirements for minor teaching fields as listed above.)

Requirements for Second-Class Temporary Elementary-School Certificate

English (15 semester hours)	*Hr.*
Written and Spoken English English 1, 2	6
Advanced Written and Spoken English English 18	3
Study and Appreciation of Literature English 3 or 4 (English Lit.) *or* English 5 or 6 (Amer. Lit.)	3
Background of Child Lit. Lib. Sci. 203	3

Science and Mathematics (11 semester hours)	*Hr.*
Biol. 1, 2	8
OR	
General Physical Sci. 1, 2	8
Arithmetic for Teachers Math. 6	3

Social Studies (17-19 semester hours)	*Hr.*
Development of Social Institutions Hist. 1, 2 or Humanities 1, 2	6-8
Fundamental Social Problems Social Sci. 1, 2	8
History History 150	3
OR	
Geography Geog. 107 (Introductory) *or* Geog. 109 (Economic)	

Music (4 semester hours)	*Hr.*
Music in Human Relations Music 10	2
Music as an Art and Science Music 11	2

Art	*Hr.*
(4 semester hours)	
Art Appreciation	
Art 30 *or* 130	2
Creative Expression in the Fine Arts	
Art 1	
OR	
Creative Expression in the Applied Arts	
Art 2	2

Health and Physical Education	*Hr.*
(4 semester hours)	
Physical Education for Men	
Phys. Ed. 1 and 2 *or* 43	2
Physical Education for Women	
Phys. Ed. 41 and 42 *or* 43	2
Health Education	
Health Educ. 101	2

Education	*Hr.*
(17-24 semester hours)	
Human Growth and Development	
Educ. 105, 106	6
Psychology and Management, El. Sch.	
Educ. 141	2
Reading in El. Sch.	
Educ. 142	
Arithmetic in El. Sch.	
Educ. 143	
Social Studies in El. Sch.	
Educ. 144	
Science in El. Sch.	
Educ. 145	5
Student Teaching	
Educ. 147	3
Electives	
(24 semester hours)	

OTHER REQUIREMENTS

1. To pursue this program a student is required to: (a) enroll in the College of Education, and (b) have a Third-Class Elementary or Standard Normal Certificate, or have a minimum of one year's teaching experience in the public schools.
2. No more than 18 semester hours by extension and/or correspondence can be accepted.
3. A grade-point average of 2.0 ("C") or better, as follows: (1) on the total of college credits earned; (2) on the hours earned in Education; (3) in student teaching; and (4) in non-Education courses.
4. Thirty-two semester hours must have been completed in residence at the University or 32 semester hours must have been completed in residence at one institution with at least 16 hours completed in residence at the University.

Requirements for Provisional Professional Certificate, Grades 1-9

Provisional Professional Certificates, Grades 1-9 (valid for three years for teaching in the elementary school) will be issued to applicants who:

1. Have an undergraduate degree and the recommendation of the Dean of the College of Education.
2. Are within 18 hours of meeting the requirements for a Professional Certificate, Grades 1-9.
3. Have completed 15 hours of Elementary Education (including a course in student teaching), selected from courses applicable for a Professional Certificate, Grades 1-9.
4. Have completed a part of the required courses in English, social studies, science and mathematics, music, art, and physical education.

PROGRAM FOR PROFESSIONAL CERTIFICATE, GRADES 7-12

Education: Courses Required and Electives Approved for the Professional Certificate, Grades 7-12

(A minimum of 20 semester hours of approved Education courses is required for a Professional Certificate, Grades 7-12, and a maximum of 24 semester hours will be accepted.)

I. *Required Courses* — *Semester Hours*

Sophomore or Junior Year

Ed. 105.	Human Growth and Development—Introduction ..	3
Ed. 106.	Human Growth and Development—Principles of Learning	3

Senior Year

Ed. 124.	Student Teaching	6)
Ed. 150-170.	Materials and Methods	2) to be
Ed. 120.	Principles of Teaching in Secondary Schools	) taken as 4) a block

II. *Approved Electives in Secondary Education—Junior or Senior Year* .. 2-6

Selected from Education:

Ed. 109, 150-170, 203, 221, 222, 231, 233, 259, 219 or 262, 276 or 277 or 284, 285, 291. (In most cases, Ed. 109 is the preferred elective.)

High-School Teaching Fields

Students desiring to qualify for a Professional Certificate, Grades 7-12, must complete the requirements in two teaching fields.

AGRICULTURE—Vocational Agriculture	*First Teaching Field*
Minimum Requirements	50 hr.

I. *Required Courses*

1. Farm Crops, Soils and Horticulture Agron. 1, 2, Hort. 1, 2 *or* 229	11
2. Animal, Dairy, and Poultry Science An. Sci. 11, 101, Dairy Sci. 11, and Poultry Sci. 1.....	13
3. Agricultural Economics Agr. Econ. 102, 104	6
4. Agricultural Mechanics Agr. Mech. 152, 153, and one elective	9
5. Plant Pathology or Animal Science An. Sci. 102 *or* Pl. Path. 201	3-4

NOTE: Teachers of Vocational Agriculture must be approved by the State Supervisor of Vocational Agriculture and the Vocational Agriculture Teacher-Trainer.

II. *Electives in the above fields and in Agricultural Education, Entomology, Forestry, and Genetics* 7-8

Agr. Econ. 105, 131, 200, 206, 230, 271
Agr. Educ. 118
Agr. Mech. 113, 151, 159, 170, 175, 200, 252, 254, or I.E. 7
Agronomy 205, 210, 211, 251, 254
Genetics 111, 112
An. & V. Sci. 138, 141, 142, 162, 167, 206
Poultry Sci. 103, 105, 106, 108, 201, 213
Dairy Sci. 12, 107, 123, 124, 221, 222
Hort. 104, 115, 117, 206, 208, 212, 229, 232, 234
Entomology 202

ART	*First Teaching Field*	*Other Teaching Field*
Minimum Requirements	32 hr.	25 hr.
I. *Required Courses*		
1. Freehand Drawing: Art 11 *or* 111 *or* 115, 12 *or* 112	6	6
2. Design: Art 121, 122	6	6
3. Painting: Art 113, 114	6	6
4. Modeling: Art 126	2	2
5. History and Appreciation of Art: Art 30 *or* 130; 105 *or* 106	8-9	5
II. *Electives* (*unrestricted*)	3-4	

COMMERCE	*First Teaching Field*	*Other Teaching Field*
Minimum Requirements	32 hr.	27 hr.
I. *Required Courses*		
1. Business Mathematics (Math. 8)	3	3
2. Accounting: Accounting 1, 2	6	6
3. Marketing or Retailing: Marketing 111 or 115	3	3
4. Typewriting: Secretarial Studies 61, 62	4	4
5. Shorthand: Secretarial Studies 125, 126	8	8
6. Secretarial Training and Office Practice: Secretarial Studies 131	3	3
II. *Electives* (*unrestricted in the field*)	5	

NOTE: No. 1: Economics 1 and 2 are prerequisite for Marketing 111 and 115 and may be used to meet elective requirements in the first teaching field.

NOTE: No. 2: Completion of the following courses (9 sem. hr.) will qualify the candidate to teach Commerce (Business Principles) in addition to Commerce (Occupational): Econ. 111, Money and Banking; Econ. 119, Economics of Consumption; and Business Law 111.

ENGLISH	*First Teaching Field*	*Other Teaching Field*
Minimum Requirements	35-36 hr.	24 hr.
I. *Required courses* (*exclusive of 6 hr. of Freshman Composition*)		
1. Written or Spoken English English 18 (3 hr.) and Speech 3, 6, 11, *or* 29 (3 hr.)	6	6
2. Literature English 3 and 4, *or* 163 and 164 (6 hr.) Survey: English Literature English 5, 6 (6 hr.) Survey: American Literature	12	12
II. *Electives*	17-18	6
1. Literature (Upper-division period or type courses: include not more than 3 hr. in any one type or period. Suggested choices: 142, 160, 161, 166, 173, 175, 138 or 139, 140, 141; one or more "200" courses in authors or periods of special interest to the student.)	12	6

2. Two of the following	5-6
Journalism 215 (2 hr.)	
Library Science 1 or 101 (3 hr.)	
Speech 162 (3 hr.)	

FOREIGN LANGUAGES

A. FRENCH	*First Teaching Field*	*Other Teaching Field*
Minimum Requirements	30 hr.	24 hr.
I. *Required Courses*		
1. Elementary French: French 1, 2	6	6
2. Intermediate French: French 5, 6	6	6
3. Advanced Grammar, Conversation, and Composition: French 109, 231	6	6
4. Literature of the 17th, 18th, and 19th Centuries: French 115, 116, 118	6	6
II. *Elective Courses in French—French* 103, 104, 217	6	

NOTE: Two semester hours may be deducted in the first teaching field for each high school unit with a maximum of 6 hours deduction, unless the equivalent courses are taken for University credit.

B. GERMAN	*First Teaching Field*	*Other Teaching Field*
Minimum Requirements	30 hr.	24 hr.
I. *Required Courses*		
1. Elementary German: German 1, 2	6	6
2. Intermediate German: German 3, 4	6	6
3. Spoken German: German 111, 112	6	6
*4. Survey of German Literature: German 245 ..	3	3
*5. History of German Language: German 251 .	3	3
II. *Elective Courses in German (unrestricted)*	6	3

*With the approval of the Department of German, other German graduate courses in these fields may be substituted for German 245 and 251.

NOTE: Two semester hours may be deducted in the first teaching field for each high school unit with a maximum of 6 hours deduction, unless the equivalent courses are taken for University credit.

C. ITALIAN	*First Teaching Field*	*Other Teaching Field*
Minimum Requirements	30 hr.	24 hr.
I. *Required Courses*		
1. Elementary Italian: Italian 1, 2	6	6
2. Intermediate Italian: Italian 5, 6	6	6
3. Grammar, Composition, and Conversation: Italian 109, 110	6	6
4. Italian Literature: Italian 115, 116	6	6
II. *Electives*	6	6

NOTE: Two semester hours may be deducted in the first teaching field for each high school unit with a maximum of 6 hours deduction, unless the equivalent courses are taken for University credit.

D. LATIN	*First Teaching Field*	*Other Teaching Field*
Minimum Requirements	30 hr.	24 hr.
I. *Required Courses*		
1. Grammar and Composition: Latin 1, 2	6	4
2. Cicero's Orations: Latin 4 or 203	3	3
3. Virgil's Aeneid: Latin 235	3	3
II. *Electives Latin or Classics (unrestricted)*	18	14

NOTE: Two semester hours may be deducted in the first teaching field for each high school unit with a maximum of 6 hours deduction, unless the equivalent courses are taken for University credit.

E. SPANISH	*First Teaching Field*	*Other Teaching Field*
Minimum Requirements	30 hr.	24 hr.
I. *Required Courses*		
1. Elementary Spanish: Spanish 1, 2	6	6
2. Intermediate Spanish: Spanish 5, 6	6	6
3. Adv. Grammar, Conversation, and Pronunciation: Spanish 109, 110	6	6
4. Survey of Literature: Spanish 211, 212	6	6
II. *Elective Courses in Spanish*—Spanish 103, 104, 216	6	

NOTE: Two semester hours may be deducted in the first teaching field for each high school unit with a maximum of 6 hours deduction, unless the equivalent courses are taken for University credit.

HOME ECONOMICS—General Certificate	*First Teaching Field*	*Second Teaching Field*
Minimum Requirements	37 hr.	25 hr.
I. *Required Courses*		
1. Foods and Nutrition: Home Econ. 1, 15, 115, 101	8	6
2. Textiles and Clothing: Home Econ. 2 or 12 and 17; electives chosen from courses ending with 2 or 7	8	6
3. Housing, Equipment, and Furnishings: Home Econ. 23, 123, 254 (either 123 or 23 and 254 required)	8	4
4. Home Management and Family Economics: Home Econ. 4, 134, 214, 234, and 214 required)	8	4
5. Child Development and Family Relationships: Home Econ. 106, 114 (required), 126	5	5

HOME ECONOMICS—Vocational Certificate	*First Teaching Field*
Minimum Requirements	40 hr.
1. Foods and Nutrition: Home Econ. 1, 101, 121, 15, 115, 215	8
2. Textiles and Clothing: Home Econ. 2 or 12, 102, 212, 222, 17, 117, 217	8
3. Housing, Equipment, and Furnishings: Home Econ. 3, 23, 123, 254, 133, 233 (either 123 or 23 and 254 required)	8
4. Home Management and Family Economics: Home Econ. 4, 124, 134, 214 (234 and 214 required)	8

5. Child Development and Family Relationship: Home Econ. 106, 114, 126, 206, 264, 266 (106 and 114 required) 6
6. Electives 2

INDUSTRIAL ARTS	*First Teaching Field*	*Other Teaching Field*
Minimum Requirements	32 hr.	24 hr.
I. *Required Courses*		
1. Drawing—Ed. 173 (IA), Ed. 174 (IA), Mech. Eng'g. 20, 26, Ed. 238 (IA)	4	4
2. General Shop—Ed. 107 (IA) or 108 (IA) ..	3	3
3. Organization of Industrial Arts: Ed. 197	2	2
II. *Electives (restricted to shop courses)*	23	15

Shop electives are to be taken in three or more of the shop areas, with a minimum of 6 semester hours in one and not less than 3 semester hours in two additional areas, such as:

Automotive—Ed. 247 (IA); Agr. Mech. 175
Ceramics—Ed. 122 (IA), Ed. 243 (IA); Art 126
Design—Ed. 238 (IA); Art 121, 122
Electricity—Ed. 131 (IA), Ed. 132 (IA), Ed. 248; Agr. Mech. 170, 270; E.E. 10; Phys. 113, 114
General Metal—Ed. 104 (IA), Ed. 112 (IA), Ed. 240 (IA), Ed. 241 (IA), Ed. 249 (IA), I.E. 7, 11
Leather—Ed. 121 (IA), Ed. 244 (IA); Art 127
Photography—Physics 116, 257
Plastics—Ed. 121 (IA), Ed. 245 (IA)
Graphic Arts—Ed. 180 (IA), 181 (IA), 246 (IA); Journ. 110, 170
Woodworking—Ed. 102 (IA), 103 (IA), 204 (IA)

NOTE: No credits may be counted twice by being submitted in more than one group.

NOTE: Speech 164 and 166 are recommended as electives, but may not be used to meet the minimum requirements for certification.

MATHEMATICS	*First Teaching Field*	*Other Teaching Field*
Minimum Requirements	24 hr.	22 hr.
I. *Required Courses*		
Math. 3, College Algebra	3	3
Math. 4, Plane Trigonometry	3	3
Math. 5, Plane Analytic Geometry	4	4
Math. 107, Calculus	4	4
Math. 108, Calculus	4	4
II. *Electives*	6	4

For a first teaching field, six hours of electives are needed, numbered 200 or above; for the other teaching field, four hours of electives are needed, numbered 200 or above. Courses from both the fields of algebra and geometry must be included.

NOTE: Solid Geometry, ½ unit (or 1 unit of integrated geometry) is required. Advanced placement examinations may permit a student who has 1½ units or more of high school algebra to omit Math. 3, and a student who has ½ unit of trigonometry in high school to omit Math. 4.

MUSIC	*First Teaching Field*	*Other Teaching Field*
Minimum Requirements	50 hr.	24 hr.
I. *Required Courses*		
1. Theory: Mus. 1, 2, 3, 4, 117, 118, 119, or 120	16	6
2. History or Appreciation of Music: selected from Music 140, 141, 280, 281	6	3
3. Applied Music, including Piano, Voice, Band and Orchestral Instruments: selected from Music 80, 81, 82, 83, 84, 85, 150, 197	16	8
4. Music Education and Organizations: First Field: Music 181 and Music 182 (both required); Music 183 and Music 184 (both required); two hours selected from Music 100, 102, 103, 105	12	
Second Field: Music 181 or Music 182; Music 183		5
Two hours selected from: Music 100, 102, 103, 105		2

NOTE: Students applying for the Professional Certificate, Grades 1-12, are required to complete 50 hours in Music.

PHYSICAL EDUCATION	*First Teaching Field*	*Other Teaching Field*
Minimum Requirements	35 hr.	28-30 hr.
I. *Required Courses*		
1. Anatomy and Kinesiology: Phys. Ed. 175	5	5
2. Physiology: Zool. 171	4	
3. Principles of Organization and Administration of Physical Education: Phys. Ed. 278	3	3
4. Health Education: Health Ed. 2, 101	4	4
5. Physical Inspection and Correction of Remedial Defects: Phys. Ed. 176	2	2
6. Theory and Practice in Physical Education	17	14

	Men	*Women*	*Men*	*Women*
a. Orientation: Phys. Ed. 71	2	2	2	2
b. Team Sports: Phys. Ed. 51, 55, 56	5	0	5	0
Team Sports: Phys. Ed. 31, 32, 63	0	3	0	3
c. School and Community Activities: Phys Ed. 52, 53, 54	3	0	3	0
School and Community Activities: Phys Ed. 33, 54, 61	0	4	0	4
d. School and Community Relations: Phys. Ed. 121; Recreation 4	5	0	3-4	0
Recreation Activities: Phys. Ed. 66; Safety Education 127; Recreation 4	0	5	0	3-4
e. Rhythmic Activities: Phys. Ed. 5, 132	2	0	1	0
Rhythmic Activities: Phys. Ed. 5, 35, 36, 132, 171	0	3	0	3

SCIENCES

A. BIOLOGICAL SCIENCE	*First Teaching Field*	*Other Teaching Field*
Minimum Requirements	32 hr.	24 hr.
I. *Required Courses*		
1. Biology 1, 2,	8	8
2. Chemistry 1, 2 *or* Phys. Sci. 1, 2	8	6
II. *Electives (from below)*	16	10

Electives will be chosen from the following, and must include a minimum of 5 hours in plant life and 5 hours in animal life:

Bacteriology 141
Biology 201, 202, 203, 204, 205, 207, 209, 210, 211, 221
Botany 104, 161, 218, 224, 227, 263, 266
Entomology 200, 202
Forestry 140, 141, 144, 145, 183
Genetics 111, 112, or 221
Plant Pathology 201, 203
Zoology 171, 210, 222, 223, 265

NOTE: A candidate for a teaching certificate who elects Biological Science as a first teaching field may not elect Biological and General Science as a second teaching field.

B. BIOLOGICAL AND GENERAL SCIENCE	*First Teaching Field*	*Other Teaching Field*
Minimum Requirements	42 hr.	35 hr.
I. *Required Courses*		
1. Biology 1, 2	8	8
2. Chemistry 1, 2	8	8
3. Physics 1, 2 or 111, 112	8	8
4. Geology 1, 2	3-4	3-4
II. *Electives*	14-15	8

1. Electives selected from those listed for teaching field in Biological Science (above)—a minimum of 8 hours for either teaching field. Must include a minimum of 4 hours in plant life and 4 hours in animal life. (Minimum of 16 hr. in Biological Science is required).
2. Chem. 5, 6, 15, 31, 63
3. Physics 113, 114, 116, 117, 118
4. Geology 3, 170

NOTE: A candidate for a teaching certificate who elects Biological and General Science as a first teaching field may not elect Biological Science as a second teaching field.

C. PHYSICAL SCIENCE	*First Teaching Field*	*Other Teaching Field*
Minimum Requirements	36 hr.	24 hr.
I. *Required Courses*		
1. Chemistry: Chem. 1, 2	8	8
2. Chemistry: Chem. 5 or 105, 6 or 106, 31 or 131	4	4
3. Physics: Physics 1, 2 or 111, 112	8	8

PHYSICAL SCIENCE (Cont'd)	*First Teaching Field*	*Other Teaching Field*
II. *Electives—(at least 4 hours must be in Chemistry and/or Physics)*	16	4

1. Chemistry
2. Physics
3. Geology (not Geography)
4. Astronomy*

NOTE: A Candidate for a teaching certificate who elects Physical Science as a first teaching field may not elect Physical and General Science as a Second teaching field. Phys. Sci. 1, 2, not accepted.

D. PHYSICAL AND GENERAL SCIENCE	*First Teaching Field*	*Other Teaching Field*
Minimum Requirements	42 hr.	34 hr.
I. *Required Courses*		
1. Chemistry: Chem. 1, 2	8	8
2. Chemistry: Chem. 5 or 105, 6 or 106, 31 or 131	4	4
3. Physics: Physics 1, 2 or 111, 112	8	8
4. Biology: Biol. 1, 2	8	8
5. Geology: Geol. 1, 2	4	4
II. *Electives—(at least 4 hours must be in Chemistry and/or Physics)*	10	2

1. Chemistry
2. Physics
3. Geology: (not geography)
4. Biology
5. Astronomy*

NOTE: A candidate for a teaching certificate who elects Physical and General Science as a first teaching field may not elect Physical Science as a second teaching field.

*Astronomy 106 — 3 hr.

E. GENERAL SCIENCE—(Although General Science is not recognized as a high school teaching field, it is recognized as a minor teaching field. See page 261.)

SOCIAL STUDIES	*First Teaching Field*	*Other Teaching Field*
Minimum Requirements	30 hr.	24 hr.
I. *Required Courses (Exclusive of general Social Studies requirements)*		
1. History: Hist. 52, 53, 150 *or* 250	9	9
2. Political Science: Pol. Sci. 2, 120, 221	3	3
3. Economics. Econ. 1 or 2*	3	3
4. Sociology: Sociol. 1, 104, or any 200 course except 202 and 246	3	3
5. Geography: Geog. 107 *or* 109	3	3
II. *Electives (upper-division courses from the five departments listed above)*	9	3

*Only 3 hours of economics are required for certification, but Econ. 1 and 2 are prerequisite to all upper-division courses in economics.

SPEECH	*First Teaching Field*	*Other Teaching Field*
Minimum Requirements	36 hr.	24 hr.
I. *Required Courses*		
1. Voice and Diction: Speech 3	3	3
2. Acting: Speech 6	3	3
3. Public Speaking: Speech 11	3	3
4. Oral Interpretation: Speech 29	3	3
5. Group Discussion: Speech 120	3	0
6. Argumentation and Debate: Speech 121	3	3
7. Introduction to Radio: Speech 140	3	0
8. Stage Craft: Speech 161	3	3
9. Play Directing: Speech 162	3	3
10. Speech Correction: Speech 250, 251	3	3

TEACHER-LIBRARIAN	*First Teaching Field*	*Other Teaching Field*
Minimum Requirements	24 hr.	24 hr.
I. *Required Courses*		
1. Reference and Bibliography: Lib. Sci. 101	3	3
2. Children's Literature and Story Telling: Lib. Sci. 203	3	3
3. Book Selection for Adults: Lib. Sci. 225	3	3
4. Book Selection for Adolescents: Lib. Sci. 205	3	3
5. Library Resources for Children and Young People: Lib. Sci. 230	3	3
6. Administration of the School Library: Lib. Sci. 207	3	3
7. Library Practice: Lib. Sci. 222	3	3
8. Cataloguing and Classification: Lib. Sci. 223	3	3

SPEECH AND HEARING THERAPY, PROFESSIONAL CERTIFICATE, GRADES 1-12

	Semester Hours
Minimum Requirements	51
I. *Required Areas*	
1. Public Speaking: Speech 11	3
2. Intro. to Speech Correction: Speech 250, 251	3
3. Adv. Speech Correction: Speech 259 or 275	3
4. Anatomy and Physiology of Speech and Hearing Mechanisms: Speech 256	4
5. Phonetics: Speech 254	3
6. Stuttering and other Organic Disorders: Speech 252, 259, 273	6
7. Audiology: Speech 253, 255, 271, 272 (See Note)	12
8. Clinical Method (Observation and Practice); Speech 257, 258, 277, 278*	8
II. *Electives*	9

Ed. 105, Speech 270, Psych. 125 or 236.

*These courses meet the requirement of Ed. 128.

NOTE: Practice training must be received where conferences can be held with clinician holding the advanced certificate of the American Speech and Hearing Association in speech and/or hearing therapy. Minimum total clock hours in clinical methods and practices to be 300, of which 100 clock hours must be in hearing therapy and 200 clock hours in speech therapy.

NOTE: A field of specialization in Speech Therapy only includes all requirements listed above except Speech 255 and Speech 272 in Audiology and the exclusion of 100 clock hours in Clinical Method in Hearing Therapy.

REQUIREMENTS FOR PROVISIONAL PROFESSIONAL CERTIFICATES, GRADE 7-12

Provisional Professional Certificates, Grades 7-12 (valid for 3 years for teaching in junior and/or senior high school) will be issued to applicants who meet the following requirements:

1. Graduation and recommendation by the Dean of the College of Education.
2. General Requirements: Fifteen hours of secondary education, including a course in student teaching, to be selected from the courses applicable for a first-class certificate. Three-fourths of the teaching subject-matter requirements of each division of each teaching field as designed for the Professional Certificate, Grade 7-12.

GRADUATE WORK

For complete information concerning graduate work in the College of Education, see the *Announcements* of the College of Education and the *Announcements* of the Graduate School. See also the bulletin *Teacher Training Programs—Requirements for Certification.*

COURSES OF INSTRUCTION*

No courses in Education except Ed. 102, 103, 104, 105, 106, 107, and 108 are open to sophomores. The following courses are required of teachers for recommendation for a Professional Certificate, Grades 7-12: Ed. 105, 106, 120, 124, 150-170, and enough additional hours chosen from the following approved electives to meet the minimum requirement of 20 hours in Education: 109, 150-170 in a second teaching field, 203, 221, 222, 231, 233, 259, 219 or 262, 276 or 277, 285, 284, and 291. The following courses are required of teachers for recommendation for a Professional Certificate, Grades 1-9: Ed. 105, 106, 141, 142, 143, 144, 145, and 146.

Undergraduate Division

102. Hand Woodworking (I.A.). I. 3 hr. Basic course for industrial arts teachers. Emphasis on design and construction of small projects; development of hand tool skills; a study of tools, materials, and processes; basic finishing information. Open to lower-division students. Mr. Brennan

103. Machine Woodworking (I.A.). II. 3 hr. PR: Ed. 102. Use of common pieces of power woodworking equipment and safety factors involved in their use in school shops. Open to lower-division students. Mr. Brennan

104. Basic Metalwork (I.A.). I. 2 hr. Practical work in layout and construction in bench work and wrought iron. Open to lower-division students. Mr. Ault

105. Human Growth and Development—Introduction. I, II, S. 3 hr. Open to sophomores or above. Emphasis upon competencies on the part of prospective teachers in understanding and applying principles involved in the growth and development of children and youth. Mr. Neff, Mr. Wagner, and Mr. McAvoy

106. Human Growth and Development—Principles of Learning. I, II, S. 3 hr. PR: Ed. 105. Continuation of Ed. 105 with special attention to the nature of the school program as it affects the growth and development of pupils. Open to sophomores or above. Mr. Bailey, Mr. Wagner, and Mr. Taylor

107. General Shop (I.A.). I. 3 hr. Basic course in practices and techniques involved in the areas of printing, crafts, wood and metal work, forging, and foundry. Emphasis on the organization of a general shop. Mr. Ault

*Ed. 105 is prerequisite to all other courses in Education.

108. Advanced General Shop (I.A.). II. 3 hr. Emphasis on planning, development of projects, and individualized instruction. Additional areas will include drawing, electricity, and ceramics. Mr. Ault

109. Secondary Education. I, II, S. 2 hr. Introduction to the problems of the secondary-school teacher. Mr. Cook and Mr. Sublett

110. Maintenance and Construction of Industrial Arts Equipment (I.A.). I, II, S. 2 hr. PR: Ed. 102, 104, and consent. Solution of problems arising from use of equipment found in school shops, development and construction of functional shop equipment. Mr. Brennan and Mr. Ault

112. General Metalwork 2. (I.A.). 2 hr. PR: Ed. 104 (I.A.). Continuation of Ed. 104 (I.A.). Foundry practice, forging, ornamental ironwork, with emphasis on cold forming. Construction of patterns and jigs. Open to lower-division students. Mr. Ault

115. Student Teaching in Elementary-School Music. I, II. 2 hr. Observation and practice of teaching music to pupils in grades one through six. Open to seniors who have completed 27 semester hours in Music and 8 semester hours in Education with a grade-point average of 2.0 ("C") in each and a general grade-point average of 2.0 ("C"). Mr. Brown and Mrs. Glasscock

120. Principles of Teaching in Secondary Schools. I, II, S. 4 hr. PR: Open only to those who qualify for the student teaching block. Mr. Miller

121. General Crafts 1. (I.A.). I. 2 hr. Construction of projects suitable for secondary schools in leather and plastics. Development of teaching aids in these areas. Mr. Brennan

122. General Crafts 2. (I.A.). II. 2 hr PR: Ed. 121 (I.A.). Continuation of Ed. 121 (I.A.) with emphasis on ceramics and handicrafts. Mr. Brennan

124. Student Teaching. I, II, S. 6 hr. PR: Ed. 105 and 106. This course is open only to seniors and graduate students, regularly enrolled in the University, who meet the following requirements:

1. Completion of 75 per cent of the hours required in each of two teaching fields and completion of Ed. 105 and 106, with a minimum general grade-point average of 2.0 ("C") and a minimum grade-point average of 2.0 ("C") in each teaching field and in Education.

2. An applicant for student teaching must submit positive evidence that he (or she) meets the requirements of physical condition and emotional stability necessary for the performance of the duties of a teacher in the public schools. Such evidence must come from the University Health Service on a form used by the College of Education.

3. This course must be taken concurrently with Ed. 120 and the appropriate course of Ed. 150-170, unless exceptions have previously been made with the Director of Secondary Student Teaching. A period of 3 hours daily must be reserved for this and simultaneous courses for purposes of observation, discussion, and planning.

4. The second Monday in each calendar month, 7 to 9 P.M., must be reserved for teachers' meetings.

5. Because two-thirds of the program of the University High School is in the forenoon, two-thirds of the applicants must schedule this course in the morning, reserving three hours daily without interruption. Admission is by application made early in the preceding semester to the Director of Secondary Student Teaching.

6. The adviser is responsible for furnishing a check of the student's record to determine eligibility.

7. Students with no teaching experience are supposed to take this course during the academic year. Mr. Miller and U.H.S. Staff

125. Student Teaching in Secondary-School Music. I, II. 4 hr. PR: Same requirements as Ed. 124 except in hours' credit needed. Mr. Miller and U.H.S. Staff

127. Materials and Methods in Public-School Speech and Hearing Therapy. I, II, S. 4-6 hr. PR: Permission of the director of the public-school speech and hearing therapy program. Includes experience in Grades 1 to 12. Staff

128. Clinical Practices in Public-School Speech and Hearing Therapy. I, II, S. 2-8 hr. PR: Permission of the director of the public-school speech and hearing therapy program. Includes experiences in Grades 1 to 12. This course meets the requirements of Speech 257, 258, 277, and 278. Staff

130. Materials and Methods in Elementary-School Music. I, II. 2 hr. (To be carried concurrently with Ed. 115.) Mrs. Glasscock

131. General Electricity 1. (I.A.). I. 2 hr. Basic work with splices, circuits, theory of magnetism, elementary house wiring, etc. Emphasis is placed on development of electrical areas for general shops in secondary schools. Staff

132. General Electricity 2. (I.A.). II. 2 hr. PR: Ed. 131 (I.A.). Continuation of Ed. 131 (I.A.). Staff

141. Psychology and Management of the Elementary School. I, II. S. 2 hr. PR: Ed. 105, 106, and enrollment in the elementary undergraduate program of the College of Education. Types of learning activities of the elementary school, forms of personal and social adjustment, evaluation of progress of pupils, organization of the daily program, and the management of classroom activities. Mr. Pfeltz and Staff

142. Reading in the Elementary School. I, II, S. 2 hr. PR: Ed. 105, 106, and enrollment in the elementary undergraduate program of the College of Education. Modern practices in teaching reading in the elementary school. This course is to be taken concurrently with Ed. 146, Student Teaching in the Elementary School. Mr. Kennedy, Mrs. Cunningham, and Mr. McLaughlin

143. Arithmetic in the Elementary School. I, II, S. 2 hr. PR: Ed. 105, 106, and enrollment in the elementary program of the College of Education. The methods and materials of learning and instruction in arithmetic. This course is to be taken concurrently with Ed. 146, Student Teaching in the Elementary School. Mr. McLaughlin and Mrs. Cunningham

144. Social Studies in the Elementary School. I, II, S. 2 hr. PR: Ed. 105, 106, and enrollment in the elementary undergraduate program of the College of Education. A study of modern practices in the teaching of social studies. Emphasis on the principles and techniques underlying the community-oriented social studies program. Instructional units in such areas as the community, social processes, foreign culture and geography, and history are developed. This course is to be taken concurrently with Ed. 146, Student Teaching in the Elementary School. Mr. Pfeltz, Mr. McLaughlin, and Mr. Sublett

145. Science in the Elementary School. I, II, S. 2 hr. PR: Ed. 105, 106, and enrollment in the elementary undergraduate program of the College of Education. A study of modern practices in the teaching of science. Emphasis on the principles and techniques underlying the community-oriented science program. Students are guided in developing instructional units in such areas as the earth and the universe, conservation, health, living things, and physical and chemical phenomena. This course is to be taken concurrently with Ed. 146, Student Teaching in the Elementary School. Mr. Katz

146. Student Teaching in the Elementary School. I, II, S. 6 hr. PR: Ed. 105, 106, and enrollment in the elementary undergraduate program of the College of Education; a minimum general grade-point average of "C" (1) in the non-Educational courses and (2) in Education courses; and senior standing. An applicant for student teaching must submit positive evidence that he or she meets the requirements of physical condition and emotional stability necessary

for the performance of the duties of a teacher in public schools. Such evidence shall be provided by the University Health Service on a form used by the College of Education. Ed. 142, 143, 144, and 145 must be taken concurrently with student teaching. Mr. Pfeltz and Staff

147. Student Teaching in the Elementary School. I, II, S. 3 hr. PR: Enrollment in the elementary undergraduate program of the College of Education and consent. A special course for transfer students who have completed three or more hours of student teaching in other institutions or for those who are upgrading certificates. Mr. Pfeltz and Staff

148. Student Teaching in the Elementary School. I, II, S. 3 hr. PR: Enrollment in the elementary undergraduate program of the College of Education and consent. A continuation of Ed. 147 for students who need more than three hours in directed teaching for graduation or certification. Mr. Pfeltz and Staff

149. Language Arts in the Elementary School. I, II, S. 2 hr. PR: Ed. 105, 106, 141 and consent. Modern practices in teaching the language arts. Mr. Kennedy, Mrs. Cunningham, and Mr. McLaughlin

150-170. Materials and Methods of High-School Teaching. I, II, S. 2 hr. PR: Consent. Special methods in the various secondary-school teaching fields. For West Virginia certification these courses are an integral part of Ed. 124. May also be chosen as a 2 hr. elective by students who are registered for student teaching in other fields.

The various sections of this course, with their instructors, follow:

150. Biology. 2 hr.	Mr. Caruso
152. Physical Education. 2 hr.	Mr. Brock and Mr. Fizer
153. French. 2 hr.	Miss Brochick
154. Speech. 2 hr.	Staff
155. Library Science. 2 hr.	Mrs. Callahan
156. Spanish. 2 hr.	Staff
157. Latin. 2 hr.	Mrs. Dorsey
160. Agriculture. 3 hr.	Mr. Butler and Mr. Bryant
161. English. 2 hr.	Miss Engle, Mr. Harper, and Mrs. Post
163. Home Economics. 2 hr.	Miss Cook
164. Industrial Arts. 2 hr.	Mr. Ellis
165. Mathematics. 2 hr.	Mrs. Dorsey and Miss Wilt
166. Physical Science. 2 hr.	Mr. Caruso
167. Social Studies. 2 hr.	Mr. Broyles, Miss Woofter, and Mr. Orlandi
168. Art. 2 hr.	Mr. Madia
169. Music. 2 hr.	Mr. Wood
170. Commerce. 2 hr.	Mr. Lee

173. Technical Drawing 1. (I.A.). I. 2 hr. Fundamentals of mechanical drawing with emphasis on establishment of good techniques; nomenclature, convention. Mr. Ault

174. Technical Drawing 2. (I.A.). II. 2 hr. PR: Ed. 173 (I.A.). Continuation of Ed. 173 (I.A.). Detail and assembly drawing, sketching, tracings, and methods of duplication. Mr. Ault

180. Graphic Arts 1. (I.A.). I. 2 hr. Familiarization with hand composition, silk screen, linoleum block, and other methods of graphic reproduction suitable for use in secondary school industrial arts shops. Mr. Brennan

181. Graphic Arts 2. (I.A.). II. 2 hr. PR: Ed. 180 (I.A.). Continuation of Ed. 180 (I.A.) with emphasis on letterpress and offset press operations. Mr. Brennan

194. Organization of Industrial Arts. II. 2 hr. Comparative analysis of the objectives of general and industrial arts education; industrial arts content; study of the problems involved in organizing and administering industrial arts courses in unit and general shops. Mr. Brennan and Mr. Ault

202.* Primary-Kindergarten Education. I, II, S. 2 hr. PR: Consent. Application of the principles of psychology to early childhood education. Mr. Kennedy and Mrs. Cunningham

203. Organization and Administration of Adult Education. II. 2 hr. Mr. Allen

204. Advanced Woodworking, Construction, and Finishing. (I.A.). II, S. 3 hr. PR: Ed. 102 (I.A.), 103 (I.A.), or equiv. Selection of advanced projects, analysis of construction, planning, and finishing, application of machine tools. Mr. Brennan

206. Industrial Experience. (I.A.). I, II, S. 2-6 hr. Open only to students qualifying to teach industrial arts or to become counselors. Evaluation of educative outcome of personal employment in industry as determined by duration, experience, records, study on job, and final examination. Counts as extension credit. Mr. Brennan and Mr. Ault

208. Wood Finishing. (I.A.). I, S. 2 hr. PR: Ed. 103 (I.A.), 204 (I.A.). Practice and theory in the art of sanding, scraping, filling, dyeing, staining, waxing, and other natural and synthetic treatments to the surface of wooden articles constructed in the industrial arts shop. Mr. Brennan

212. Evaluation of Pupil Progress in the Secondary Schools. I, II, S. 2 hr. PR: Consent. Practical techniques for evaluating pupil progress and teaching effectiveness. Staff

219. Adult Education in Homemaking. I, II. 2 hr. PR: 30 hr. of home economics and 7 hr. of Education. Current trends and present activities in the field of adult education. Organization of adult classes, development of unit outlines; consideration of teaching methods; illustrative material, and bibliography for use in adult classes. Staff

221. Audio-Visual Resources for Instruction. I, II. 2 hr. Multisensory techniques in using wide varieties of materials and resources in teaching. One laboratory period per week, time to be arranged. Mr. Allen

222. Current Practices in Secondary Education. I, II, S. 2 hr. Staff

223. Clinical Experience in Student Teaching. I, II, S. 2 hr. PR: Ed. 124 or equiv., permission of Director of Secondary Student Teaching. This is an advanced course in student teaching, stressing clinical procedures in classroom learning problems, industrial arts therapy, and other related areas. Mr. Miller and Staff

226. Advanced Student Teaching (Elementary). I, II, S. 3 hr. PR: 3 hr. of student teaching or equiv., permission of the Director of Elementary Student Teaching. Emphasizes types of experiences not generally included in beginning student teaching. Mr. Kennedy and Staff

231. Philosophy of Education. II, S. 2 hr. PR: 5 hr. of Ed. courses, senior standing. Evaluation of educational theories and practices in terms of the several judgments of ultimate worth set up by man in his endeavor to understand life's real meaning. Mr. Sublett

*To receive graduate credit for courses numbered 200-299, the student must have had at least 17 hours in undergraduate Education.

233. Educational Sociology. S. 2 hr. PR: 5 hr. in Ed. courses, senior standing. Impacts of institutions of society upon school, and school's counter-impact upon social institutions and agencies. Mr. Cook and Mr. Sublett

238. Industrial Arts Design. (I.A.). I, S. 2 hr. PR: Consent. Fundamentals of design, characteristics of period and modern furniture, and construction details. Mr. Madia

240-250. These courses are designed to prepare versatile teachers of industrial arts and to meet state certification requirements. The abbreviated introduction to specific crafts through these courses is intended to provide broad rather than specialized experience and to prepare the teacher to teach the fundamentals of crafts rather than to attain vocational competence. Prospective teachers should elect, from these courses, those which will supplement their previous training in organizing and directing the industrial arts program.

240. Advanced Metal Working. (I.A.). I, S. 2 hr. PR: Ed. 104 (I.A.). Design and construction using sheet, bar, and wire. Introduction to jewelry. Mr. Madia

241. Jewelry. (I.A.). II, S. 2 hr. PR: Ed. 104 (I.A.). Design and construction of projects in costume jewelry made from gold-filled and silver wire and sheets; installing jewels; gold and silver soldering; tool design and tool making for special operations. Mr. Madia

242. Upholstering. (I.A.). S. 2 hr. PR: Ed. 103 (I.A.). Original and renewal installation of selected materials for springing, stuffing, and covering furniture; incidental reinforcement and repairs. Each student will need to purchase a simple kit of tools. Mr. Madia

243. Advanced Ceramics. (I.A.). II, S. 2 hr. PR: Ed. 122 (I.A.). Concentration in ceramic manipulation, particularly on the potter's wheel; glaze experimentation. Mr. Brennan

244. Advanced Leather Work. (I.A.). I, S. 2 hr. PR: Ed. 121 (I.A.). Advanced leather work techniques with emphasis on leather carving. Mr. Brennan and Mr. Ault

245. Advanced Plastics. (I.A.). II, S. 2 hr. PR: Ed. 121 (I.A.). Continued manipulation of plastic materials. Construction of dies, forms; internal carving. Mr. Brennan and Mr. Ault

246. Advanced Graphic Arts. (I.A.). II, S. 2 hr. PR: Ed. 180 (I.A.), 181 (I.A.) or equiv. Binding, silk-screen and off-set reproduction methods. Provision is made for concentration in one unit with opportunity for personal research in student's chosen area. Mr. Brennan

247. Auto Mechanics. (I.A.). S. 2 hr. Practice and theory in operation and maintenance of internal combustion engines. Staff

248. Advanced Electricity. (I.A.). II, S. 2 hr. PR: Ed. 131 (I.A.) or equiv. A study of the technical phases of electricity with emphasis on planning shop courses, shop equipment and layout, and development of instructional aids. Mr. Ault

249. Sheet Metal. (I.A.). II, S. 2 hr. Designing, making patterns, and construction of sheet metal objects useful about the modern home. Cutting, bending, forming, spinning, soldering, and similar operations. Mr. Ault

250. Industrial Arts for Elementary Schools. (I.A.). II, S. 2 hr. Particularly designed for elementary teachers. Planning units around activity areas and developing of manipulative operations to supplement these units. Work includes simple wood and metal operations, plastics, and crafts suitable for the elementary pupil. Mr. Madia

251. Production of Audio-visual Resources. I, S. 2 hr. PR: Ed. 221. Practical participation in planning and producing audio-visual media for use in teaching, for supporting the school's public relations program, and in educational research. Mr. Allen

259. The Music Education Program. S. 2 hr. PR or parallel: Ed. 124 or consent. Organization and administration of the complete music education program for grades one through twelve. Mr. Brown

262. Vocational Home Economics in Secondary Schools. I, II. 3 hr. PR or parallel: Ed. 120, 124, 163; 25 hr. in Home Econ. Primarily for seniors and teachers of home economics. Miss Noer

270. Special Problems and Workshops. I, II, S. 1-4 hr. PR: 14 hr. in Education. To take care of credits for special workshops and short intensive unit courses on methods, supervision, and other special topics. Maximum of 8 sem. hr. may be applied toward the Master's Degree, of which no more than 3 sem. hr. shall be in extension. Staff

271. Educational Statistical Methods. I, II, S. 2 hr. PR: Senior or graduate standing. Elementary methods in educational statistics. Mr. Bailey

272. Internship in Industrial Arts Therapy (I.A.). I, II, S. 8 hr. Designed for student internship in clinical setting to provide individualized instruction in the teaching technique in industrial arts and the therapeutic practice in rehabilitation of the handicapped. Mr. Brennan

274. Workshop: Economic Education. S. 3 hr. A workshop for principals, teachers, and supervisors with emphasis on the economic structure of our society and methods of integrating economics into the school program. Sponsored jointly by the College of Education and the College of Commerce.
College of Education and College of Commerce Staffs

275. Developing the Core Program. II, S. 2 hr. PR: May to be taken with or following student teaching. Mr. Cook

276. Teaching Young and Adult Farmer Classes. I, S. 2 hr. PR: Ed. 105, 106. Participation in conducting young and adult farmer classes and school-community food preservation centers; organization, course of study, and methods of teaching and supervision, and young farmers' association. Mr. Butler

277. Organizing and Directing Supervised Farming Programs. II, S. 2 hr. PR: Ed. 160 or consent. Planning programs of supervised farming, supervising and evaluating such programs for all-day students, young farmers, and adult farmers. Mr. Butler

284. Pupil-personnel Administration. I, II, S. 2 hr. PR: Ed. 105, 106. Pupil accounting, guidance, extra-curricular activities, and control. Open only to senior students and graduates. Staff

285. The Junior High School. I, II. 2 hr. PR: Ed. 105, 106, and consent. Development, philosophy, program, and practices of the junior high school. Open only to seniors and graduates. Staff

291. Exploratory Reading. S. 2 hr. PR: Consent. For those who feel need for wider acquaintance with books. Mr. Kennedy

292. Advanced Instruction in Typewriting (B.E.). S. 2 hr. PR: Teacher Certification in Commerce. Psychological principles of motor skill applied to the teaching of keyboard, development of speed and accuracy; diagnostic and remedial treatment, motivation, production units, evaluation and grading; teaching of electric typewriter. Staff

293. Advanced Instruction in Shorthand and Transcription (B.E.). S. 2 hr. PR: Teacher Certification in Commerce. Techniques for developing reading and writing skills; patterns of dictation to achieve objectives; transcription practices and standards of mailability. Staff

294. Seminar in Business Education (B.E.). S. 2 hr. PR: Teacher Certification in Commerce. Group and individual problems in business education. Staff

295. Advanced Instruction in Bookkeeping (B.E.). S. 2 hr. PR: Teacher Certification in Commerce. Approaches to the teaching of bookkeeping, motivation and teaching devices, measurement and evaluation of students. Staff

296. Advanced Instruction in Office Practice and Business Machines (B.E.). S. 2 hr. PR: Teacher Certification in Commerce. Organization of office practice and machine classes, adjustment of course content to class and community needs, procedure for presenting subject matter, measurement and evaluation of student progress. Staff

297. Principles of Business Education (B.E.). S. 2 hr. PR: Teacher Certification in Commerce. Practices, trends, and current issues in business education; study of placement, follow-up, and work experience programs; guidance, measurement, and standards. Staff

298. Exploratory Media in Education. I, II, S. 2 hr. PR: Upper-division or graduate standing. The use of newer media in teaching. Educational television, radio, and programmed learning will be given special emphasis. A minimum of one hour each week laboratory practice in observation and use of newer media is required. Mr. Gunselman

Graduate Division

301. Introduction to Educational Research. I, II, S. 2 hr. Required of all candidates for the administrative and supervisory programs and for Options A and B for the Master's Degree. Methods, techniques, interpretations, and reporting of research. Mr. Hofstetter and Mr. Bailey

303. History of Industrial Education. I, S. 2 hr. Development of hand work instruction in Europe and the United States. Particular emphasis is placed on modern practices in industrial education and its leaders, their viewpoints, and contributions. Mr. Brennan

304. Corrective Techniques in Reading Instruction. I, II, S. 2 hr. PR: Ed. 309 or consent. Methods and materials to help pupils with reading difficulties. Mr. Kennedy

305. Problems in Reading Instruction. I, II, S. 2 hr. PR: Ed. 304, 309. Individual and group research on selected problems in the teaching of reading. Mr. Kennedy

306. Social Studies in the Elementary School. I, II, S. 2 hr. PR: 10 hr. undergraduate credit in elementary education, or consent. Survey course in the teaching of social studies. Mr. Pfeltz, Mr. McLaughlin, and Mr. Sublett

307. Science in the Elementary School. II, S. 2 hr. PR: 10 hr. of undergraduate credit in elementary education. Materials and methods of science with special consideration of human health and safety. Mr. Katz

308. The Teaching of Arithmetic. I, S. 2 hr. PR: 10 hr of undergraduate credit in elementary education, or consent. Processes of number thinking and sequential steps of their development among pupils. Mr. McLaughlin and Mrs. Cunningham

309. The Teaching of Reading. I, II, S. 2 hr. PR: 10 hr. of undergraduate credit in elementary education, or consent. Survey course in the teaching of reading. Mr. Kennedy

310. School Shop Planning. I, S. 2 hr. A study of considerations affecting the selection, purchase, arrangement, installation and use of equipment for different levels and types of school shops. Each student prepares a scale model of a typical shop installation. Mr. Ault

311. School Shop Safety Programs. II, S. 2 hr. Emphasis on safety measures appropriate to schools and industry, teacher liability. Students prepare a written report on an approved topic. Mr. Ault

312. Evaluation of Pupil Progress in the Elementary School. I, II, S. 2 hr. PR: Consent of Instr. Practical techniques for evaluating pupil progress and teaching effectiveness. Staff

313. Elementary-school Guidance. I, II, S. 2 hr. PR: Consent. Practical application of the principles of guidance to the elementary school. Staff

315. Current Practices in Elementary Education. I, II, S. 2 hr. PR: Consent. Critical analysis of modern techniques and practices in the elementary school. Mr. Pfeltz and Staff

318. Planning Programs and Courses for Vocational Agriculture Departments. I, S. 2 hr. PR: Ed. 124. Gathering data, studying the farming problems of all-day students, young farmers, and adult farmers, and planning the total program for the department. Mr. Butler

319. Special Problems in Teaching General Shop. S. 3 hr. PR: Ed. 107 or equiv. Problems peculiar to teaching Industrial Arts in the General Shop. Mr. Ault

320, 321. Special Topics in Industrial Arts. I, II, S. 2-3 hr. ea. PR: Consent. For graduate students in industrial arts. Special projects of improvement in phases needing special attention. Mr. Ault and Mr. Brennan

322. Organizing Programs of Audio-visual Instruction. I, S. 2 hr. PR: Ed. 221. An advanced course dealing with problems of planning extensive programs for using exhibits, slides, graphics, films, radio, television, etc., for instructional purposes. Mr. Allen

324. Administration of Individual Intelligence Tests. I, II, S. 4 hr. Techniques in administering, scoring, and interpreting individual mental ability tests. Mr. Jarecke

325. Practice Administration in the Elementary School. I, II. 2 hr. PR: Consent. The principal enrolled in on-the-job education is given help in school organization and administration according to the needs in his own school and school system. Mr. Pfeltz

326. Practice in Supervision of Elementary-school Instruction. S. 2 hr. PR: 6 graduate hr. of elementary education, or consent. Observing and practicing major activities of the supervisor in work with pupils and teachers. To be taken late in student's candidacy. Mrs. Cunningham

327. Demonstration and Practice in the Supervision of Secondary-school Instruction. II, S. 2 hr. PR: Consent. Opportunity to observe approved processes in classroom supervision, and to practice under guidance the art of improving classroom instruction. To be taken late in student's candidacy. Mr. Miller

328. Practice Administration in the Secondary School. I, II. 2 hr. PR: Consent. The principal enrolled in on-the-job education is given help in school organization and administration according to the needs in his own school and school system. Mr. Hofstetter and Staff

335. The Elementary-school Curriculum. I, II, S. 2 hr. PR: 10 hr. of undergraduate credit in elementary education, or consent. Organization of content and materials of instruction of subjects through the grades. Mr. Sublett

336. The Secondary-school Curriculum. I, II, S. 2 hr. PR: High-school teaching experience, or consent. Principles of and practice in curriculum construction for modern high schools. Mr. Cook

337. Problems in Secondary-school Curriculum. I, II, S. 2 hr. PR: 8 hr. graduate education, including Educ. 336. Critical study of selected problems in the secondary-school curriculum with special emphasis on research. Mr. Cook

338. Problems in the Secondary School. I, II. 2 hr. PR: Consent. Culminating course for on-the-job education of principals. Requires the principal to work

through and write a project designed to improve instruction and/or administration of his school. Mr. Hofstetter and Staff

339. Public-school Organization and Administration. I, S. 2 hr. PR: 20 hr. of Ed. courses, and consent. An orientation course for present and prospective school administrators, with emphasis upon the problems which grow out of the county unit. Required as a basic course of all who specialize in educational administration. Mr. Morris

340. Public-school Finance. S. 2 hr. PR or Conc: Ed. 339 and consent. Sources of school support; taxation; efficient management of school money, locally by improved budget practices and statewide by more adequate apportionment plans. To be taken late in student's candidacy. Mr. Morris

341. School Buildings and Equipment. I, S. 2 hr. PR or Conc: Ed. 339 and consent. Philosophy, planning, and management of school plant as appropriate physical environment—the home of pupils for more efficient learning. Mr. Morris

342. Public Education and the Law. I, II, S. 2 hr. Legal permissives and limitations involved in setting policy for, organization of, and administration of public schools. Mr. Morris

343. School Surveys. S. 2 hr. PR or conc: Ed. 339 and consent. Development of the educational survey as an instrument for improving educational procedures. Mr. Allen and Mr. Hofstetter

344. Staff-Personnel Administration. S. 2 hr. PR or Conc: Ed. 339, consent. Selection, induction, direction, evaluation, improvement, and promotion of members of the supervisory, instructional, research, clerical, and maintenance staffs. Mr. Morris

345. Seminar in School Administration. I, II, S. 6-8 hr. PR: Consent. An integrated study of the problems of the school administrator in the areas of finance, buildings and equipment, school law, school surveys, staff personnel, organization and administration. Mr. Hofstetter and Staff

346. Principles of Supervision. I, S. 2 hr. Basic, general principles of elementary-school, junior high-school, and senior high-school supervision. Mr. Hofstetter and Mr. Gunselman

348. Human Development and Behavior. I, II, S. 3 hr. A study of the inter-relationship of physical and environmental factors as they affect the behavior of children and youth. Mr. Bailey and Mr. Taylor

350. Inter-Disciplinary Seminar for School Administrators. I, II. 6 hr. PR: Consent. A study of the academic disciplines pertinent to school administration. Staff

351. Principles of Communication. I, II, S. 2 hr. Critical review of psychological implications of communication media in learning and teaching. Mr. Allen

353. The Secondary-school Principal. II, S. 2 hr. PR: Ed. 339 and high-school teaching experience, or consent. Open only to graduate students in Education, late in candidacy. Practicum in secondary-school administration. Mr. Miller

356. The Elementary-school Principal. S. 2 hr. PR: 6 graduate hr. of elementary education, or consent. Work of principal in management and supervision of school. To be taken late in candidacy. Mr. Pfeltz

357. Organization and Administration of Vocational Education. S. 2 hr. PR: Ed. 339. Specific consideration of the development of practical training in agriculture, home economics, industry, and commerce, with particular reference to their place in the public-school system. Mr. Allen

360. Problem in Education. I, II, S. 1-3 hr. Total minimum, 3 hr. Research for Master's Degree in Education, option B. Staff

361. Thesis in Education. I, II, S. 1-6 hr. Total minimum, 6 hr. Research for Master's Degree in Education, option A. Staff

362. Project in Education. I, II, S. 1-6 hr. Total minimum, 6 hr. Research for the program leading to the Certificate of Advanced Study in Education. Staff

363. Dissertation. I, II, S. Research for the Doctor of Education Degree. Staff

364. Advanced Methods in Teaching Industrial Arts. II, S. 2 hr. PR: Ed. 194. Industrial arts development; effective use of instructional materials; methods of evaluating industrial arts subjects. Mr. Brennan

365. Curriculum Construction in Industrial Arts. S. 3 hr. PR: Consent. Techniques used in building a curriculum in industrial arts. Mr. Brennan and Staff

366. Teaching the Language Arts. I, II, S. 2 hr. PR: Consent. Advanced study of the interrelationships of the language arts. Mr. Kennedy

367. Teaching the Social Studies in Secondary Schools. I, II, S. 2 hr. PR: Consent. Survey course in teaching the social studies. Mr. Cook

368. Nature and Needs of Exceptional Children. I, II, S. 3 hr. Etiology, philosophy, and education of mentally retarded, physically handicapped, and mentally advanced. Mr. Neff

369. Curriculum, Materials, and Methods for Mentally Retarded. I, II, S. 3 hr. Mr. Neff

370. Principles of Instruction. I, II, S. 2 hr. The application of philosophical and psychological foundations of instruction. Mr. Cook

371. Curriculum, Materials, and Methods for Mentally Gifted. I, II, S. 3 hr. Mr. Neff

372. Statistical Analysis in Education. I, II, S. 2 hr. PR: Ed. 271 or consent. Statistical analysis and inference. Mr. Hofstetter and Mr. Bailey

373. Basic Course in Principles and Practices of Guidance. I, II, S. 3 hr. An overview of a total guidance program. Mr. Jarecke and Staff

374. Occupational Information Techniques. II, S. 2 hr. PR: Ed. 373. Methods of gathering and disseminating occupational and educational information. Mr. Jarecke and Staff

375. Individual Inventory Techniques. II, S. 2 hr. PR: Ed. 373. Comprehensive study of all objective measures used in schools; techniques of administration, interpreting and recording results. Mr. Jarecke and Staff

376. Counseling Techniques. I, II, S. 2 hr. PR: Ed. 373, 374, 375. Study of and practices in techniques of counseling. Mr. Jarecke and Staff

377. Special Counseling Problems. I, II, S. 3 hr. PR: Ed. 373, 374, 375, 376. Work with actual problem cases according to clinical procedures. Cases to be pursued to satisfactory conclusion. Mr. Jarecke and Staff

378. Advanced Studies of Human Adjustment. II, S. 2 hr. PR: Ed. 373, 374, 375, 376. Analytical consideration of identification, causes, and development of psychological maladjustments; further study of developments in counseling and background in advance studies in guidance. Mr. Jarecke and Staff

379. Organization and Administration of Guidance Services. II, S. 2 hr. PR: Ed. 373, 374, 375, 376. Operative framework of guidance programs in terms of personnel, functions, relationships, physical facilities, instructional integration, finance standards, law and regulations. Mr. Jarecke and Staff

380, 381, 382, 383. Practice in Supervision. I, II. Credit: 2 hr. ea. PR: Assignment to actual full-time work in supervision in a school system, previous certification,

and consent. Each course a continuation of the preceding. To complete the entire 8 hours, not less than two full years of field experience under control of Director of Supervised Training will be accepted. Mr. Hofstetter

385. History of Education in the United States. I, II, S. 2 hr. Origins, development, and significance of educational movements. Mr. Cook and Mr. Sublett

395, 396, 397, 398. Practicum. I, II, S. 1-4 hr. per sem. or term—aggregating not more than 12 hr. PR: 8 graduate hr. in Education. Enrollment with permission of adviser or instructor in consultation. Special individual and group projects. Staff

To provide appropriate credits for special workshops, prolonged systematic conferences on problems and projects in Education. Credits in these projects cannot be substituted for required courses and must be done in residence. Staff

Agricultural Education: Mr. Butler

Audio-visual Education: Mr. Allen

Educational Measurement and Evaluation: Mr. Bailey

Educational Psychology: Mr. Bailey, Mr. Taylor, Mr. McAvoy, Mr. Neff, and Mr. Wagner.

Educational Sociology: Mr. Cook and Mr. Sublett

Guidance: Mr. Jarecke

Elementary Education: Mr. Katz, Mr. Kennedy, Mr. Pfeltz, and Mr. Sublett

Home Economics Education: Miss Brown and Miss Noer

Human Growth and Development: Mr. Wagner, Mr. Taylor, and Mr. McAvoy

Industrial Arts Education: Mr. Ault and Mr. Brennan

Music Education: Mr. Brown

Philosophy of Education: Mr. Sublett

School Administration: Mr. Morris, Mr. Miller, and Mr. Pfeltz

Secondary Education: Mr. Cook, Mr. Gunselman, and Mr. Miller

Special and Adult Education: Mr. Allen and Mr. Neff

Supervision: Mr. Hofstetter and Mr. Gunselman

Teaching of Mathematics: Mrs. Cunningham and Mr. McLaughlin

Teaching of Science: Mr. Katz

Teaching of Social Studies: Mr. Cook, Mr. Pfeltz, and Mr. Sublett

Vocational Education: Miss Brown, Miss Noer, Mr. Allen, and Mr. Butler

399. Techniques of Educational Research. II. 2 hr. PR: Ed. 271 and consent. Application of research techniques to problems in modern education; analysis and implications of results. Mr. Hofstetter

The College of Engineering and The School of Mines

General Information

THE COLLEGE OF ENGINEERING; THE SCHOOL OF MINES

For the purpose of administration and instruction, the College of Engineering is organized into the following departments:

Aero-Space Engineering (A-S E.)
Agricultural Engineering (Ag.E.)
Chemical Engineering (Ch.E.)
Civil Engineering (C.E.)
Electrical Engineering (E.E.)
Mechanical Engineering (M.E.)
Industrial Engineering (I.E.)
Theoretical and Applied Mechanics (T.A.M.)

All the mining and industrial extension work of the University is organized under the School of Mines. For the purpose of administration the school is divided into the following divisions:

Mining and Industrial Extension
Mining Engineering (E.M.)

All Curricula Are Accredited By The Engineer's Council For Professional Development

The Engineer's Council for Professional Development, a joint body concerned with the enhancement of the status of the engineer and the engineering profession, has been designated by its constituent bodies (American Society of Civil Engineers, American Institute of Mining, Metallurgical and Petroleum Engineers, The American Society of Mechanical Engineers, American Institute of Electrical Engineers, The American Society for Engineering Education, American Institute of Chemical Engineers, Institute of the Aerospace Sciences, Institute of Radio Engineers, National Council of State Boards of Engineering Examiners, and the Engineering Institute of Canada) as the co-ordinating agency for the accrediting of undergraduate engineering curricula in the United States.

All undergraduate curricula of the College of Engineering and of the School of Mines are fully accredited by the Engineer's Council for Professional Development.

Buildings and Equipment

The *College of Engineering* is housed in the new buildings on the Evansdale Campus. The Engineering Center is located approximately a mile from the Main Campus and one-half mile from the Medical Center Campus. The main structure of the Engineering Center is a 14-floor building, featuring an 11-story tower on a 3-story base. The center has been carefully planned to enable the College to accelerate its educational, research, and special programs—all designed to serve the State and the nation.

The *School of Mines* is housed in the Mineral Industries Building on the Main Campus.

Complete details concerning laboratories, class rooms, and other general information may be found in the *Announcements* of the College of Engineering and the the School of Mines.

Requirements For Degrees

Any student, in order to be eligible to receive a Bachelor's degree in any branch of engineering for which degrees are offered, in addition to satisfying all entrance requirements, shall be required to complete satisfactorily the number of semester hours of work as specified in the curriculum of the department leading to the degree for which the student is a candidate, plus the general requirements of physical education, military or air science, and English proficiency by the University for such a degree.

A grade of "C" or better must be attained in each mathematics course before registration in a subsequent mathematics course is allowed. This rule shall not apply to Mathematics 2 and Mathematics 7.

SUBSTITUTIONS

The following substitutions are regularly allowed in addition to special substitutions listed elsewhere:

Chem. 115 for Chem. 15.

Physics 1, 2, 109, and 110 for Physics 111 and 112.

Ch.E. 235 for Ch.E. 234.

Sociol. 1, Philos. 4, Pol. Sci. 101 or equiv., or Psych. 1 for Hist. 53.

THESIS

A candidate for a baccalaureate degree in some branches of engineering may, with the consent of his major professor, prepare a thesis on some subject relating to a special branch of engineering or other department of applied science. It will be presented for approval first to the instructor under whose guidance it has been prepared, then to the chairman of the department in which the degree is to be conferred. A typewritten copy of the thesis, prepared in accordance with official specifications and signed by both the instructor in charge and the chairman of the department, must be placed in the University Library before graduation.

The College of Engineering Curricula

The several four-year curricula are set up to give, in the first two years, a well-rounded training in the basic sciences of mathematics, chemistry, and physics, and in English. A moderate amount of shop work, drawing, and surveying is included to introduce the student to the practical side of engineering.

This is followed by such technical subjects as mechanics, thermodynamics, and electricity. The degree of emphasis varies somewhat with the curriculum followed. These courses bridge the gap between the pure sciences and the professional courses. In addition, courses in the humanities are given throughout the four years.

In the third and fourth years, special emphasis is placed on the professional work of the engineer. In these years a certain number of credit hours are available for electives.

The curricula are:

1. A four-year curriculum leading to the degree of Bachelor of Science in Aero-Space Engineering.

2. A four-year curriculum leading to the degree of Bachelor of Science in Agricultural Engineering.

3. A four-year curriculum leading to the degree of Bachelor of Science in Chemical Engineering.

4. A four-year curriculum leading to the degree of Bachelor of Science in Civil Engineering.

5. A four-year curriculum leading to the degree of Bachelor of Science in Electrical Engineering.

6. A four-year curriculum leading to the degree of Bachelor of Science in Industrial Engineering.

7. A four-year curriculum leading to the degree of Bachelor of Science in Mechanical Engineering.

8. Combined science and engineering curricula extending over five or more years leading to the Degree of Bachelor of Science and Bachelor of Science in Engineering.

CURRICULUM IN AERO-SPACE ENGINEERING

(E.C.P.D. ACCREDITED)

Degree: Bachelor of Science in Aero-Space Engineering

The Aero-Space Engineering curriculum is arranged to furnish the student with a comprehensive fundamental background and professional courses dealing with design, analysis and synthesis. The curriculum includes subject matter in the areas of basic science, engineering science, aero-space science, aero-space engineering, and the liberal arts.

The curriculum is designed to serve as a terminal program or as preparation for possible graduate study in engineering.

Senior students are required to make an organized inspection trip. This trip usually takes place during the fall semester, and may include visits to government research laboratories and industrial plants where aero-space products are fabricated.

Aero-space engineering theory and laboratory courses are scheduled in the curriculum to complement each other, so that the greatest benefit may be derived from both. The laboratory courses provide the student with an opportunity to become familiar with modern laboratory equipment and methods.

FIRST YEAR AERO-SPACE ENGINEERING

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
Chem. 1—Inorganic Chem.	4	Chem. 2—Inorganic Chem.	4
English 1—Comp. and Rhet.	3	English 2—Comp. and Rhet.	3
G. 1—Eng'g Lectures	Cr.	Math. 5—Analytical Geom.	4
Hist. 53—Mod. America	3	I.E. 11—Machine Work	2
Math. 3—College Algebra	3	M.E. 20—Eng'g Draw. and Graphics	3
Math. 4—Plane Trig.	3	Mil. Sci. 2 or Air Sci. 2	2
Mil. Sci. 1 or Air Sci. 1	2	Phys. Ed. 2	1
Phys. Ed. 1	1		
	19		19

SECOND YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
English 26 or 27—Intro. to Lit.	2	A.E. 116—Aircraft Det. Design	2
Math. 107—Calculus	4	English 126—Adv. Composition	3
M.E. 26—Descriptive Geom.	2	T.A.M. 101—Statics	3
Mil. Sci. 3 or Air Sci. 3	2	Math. 108—Calculus	4
Physics 111—General Physics	5	Mil. Sci. 4 or Air Sci. 4	2
Speech 11—Public Speaking	3	Physics 112—General Physics	5
	18		19

THIRD YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
A.E. 201—Elem. Aerodynamics	3	A.E. 202—Aerodynamics	3
T.A.M. 102—Mech. of Materials	3	A.E. 209—Aircraft Perf. & Stab.	4
T.A.M. 104—Dynamics	3	A.E. 210—Basic Aircraft Struc.	3
Math. 253—Adv. Applied Math.	3	C.E. 115—Fluid Mechanics	3
M.E. 121—Thermodynamics	3	T.A.M. 103—Mech. of Materials	3
Non-technical elective (Group I)*	3	Non-technical elective (Group II)*	3
	18		19

FOURTH YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
A.E. 205—Experimental Aerodynamics	2	A.E. 212—Applied Aircraft Design	3
A.E. 207—Aerodynamics Design	3	A.E. 213—Aircraft Structures Lab.	1
A.E. 211—Redundant Aircraft Struc.	3	A.E. 224—Reaction Engines	3
A.E. 223—Aero-Thermodynamics	3	Mat.E. 250—Physical Metallurgy	3
Econ. 1—Prin. of Economics	3	Econ. 2—Prin. of Economics	3
E.E. 105—Electrical Fundamentals	4	Technical electives	5
G. 100—Inspection Trip	Cr		
	18		18

**Non-technical Electives* (Group I)

Phil. 4—Intro. to Philosophy 3
Psych. 1—Intro. to Psychology 3

Non-technical Electives (Group II)

Pol. Sci. 101—Intro. to Government .. 3
Sociol. 1—Intro. to Sociology 3

***Technical Electives*

Technical electives may be selected from advanced mathematics, physics, E.E. 106, flight training (3 credit hours maximum), or any engineering course in the 200 series.

CURRICULUM IN AGRICULTURAL ENGINEERING

(E.C.P.D. ACCREDITED)

Degree: Bachelor of Science in Agricultural Engineering

Agricultural Engineering is the application of engineering principles to agriculture. Success in the application of engineering fundamentals to the agricultural industry requires knowledge of both the biological and physical sciences. The purpose of the course is to give the student general training in agricultural and engineering fundamentals. Considerable stress is given to basic requirements of plant and animal life which affect engineering practices, but greater emphasis is placed on a thorough knowledge of those underlying principles and methods which are the foundation of all the engineering professions.

Although the curriculum gives no opportunity for specialization, Agricultural Engineering is made up of four major fields. These are: Farm Power and Machinery, Farm Structures, Soil and Water Conservation, and Electric Power and Processing.

Students preparing to take Agricultural Engineering should present for entrance as many units as possible in mathematics, chemistry, and physics.

Some of the organizations and industries employing agricultural engineers are electric power companies and cooperatives; farm machinery manufacturers and distributors; manufacturers and distributors of building materials; oil companies; electric-equipment and other suppliers of farm utilities; trust companies; farm management agencies; federal agencies such as Soil Conservation Service, U. S. Department of Agriculture, Federal Land Bank, and Indian Service; colleges and universities; Army and Navy, and foreign governments.

Opportunities for employment are numerous. At no time since the establishment of the profession has it been crowded; the outlook is good for a continuance of this situation. With agriculture becoming increasingly mechanized, the demand for agricultural engineers is increasing and should continue to increase. New opportunities arise as mechanization continues. Starting salaries are in line with salaries in other branches of engineering.

FIRST YEAR AGRICULTURAL ENGINEERING

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
Chem. 1—Inorganic Chem.	4	Chem. 2—Inorganic Chem	4
English 1—Comp. and Rhet.	3	English 2—Comp. and Rhet.	3
G. 1—Eng'g Lectures	Cr.	Hist. 53—Modern America	3
M.E. 20—Eng'g Draw. and Graphics	3	Math. 5—Analytical Geom.	4
Math. 3—College Algebra	3	M.E. 26—Descriptive Geom.	2
Math. 4—Plane Trig.	3	Mil. Sci. 2 or Air Sci. 2	2
Mil. Sci. 1 or Air Sci. 1	2	Phys. Ed. 2	1
Phys. Ed. 1	1		
	19		19

SECOND YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
Ag.E. 10—Intro. to Agr. Eng'g	3	C.E. 1—Surveying	2
Math. 107—Calculus	4	Math. 108—Calculus	4
M.E. 39—Mechanisms	2	T.A.M. 101—Statics	3
Mil. Sci. 3 or Air Sci. 3	2	Mil. Sci. 4 or Air Sci. 4	2
Physics 111—General Physics	5	Physics 112—General Physics	5
Ag. Econ. 102—Agr. Economics	3	English 126—Adv. Composition	3
	19		19

THIRD YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
Ag. Econ. 104—Farm Management	3	Ag.E. 100—Farm Structures	3
E.E. 105—Electrical Fundamentals	4	C.E. 115—Fluid Mechanics	3
T.A.M. 102—Mech. of Materials	3	E.E. 205—Electrical Fundamentals	4
T.A.M. 104—Dynamics	3	I.E. 100—Manuf. Process	3
Agronomy 2—Soils	3	M.E. 121—Thermodynamics	3
		T.AM. 103—Mech. of Materials	3
	16		19

FOURTH YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
Ag.E. 140—Soil & Water Cons.	3	Ag.E. 190—Farm Machinery	3
Ag.E. 200—Seminar	1	Ag.E. 110—Appl. of Elec. to Agr.	3
M.E. 113—Design of Mach. Members	3	Agr. Sci. 52	4
Ag.E. 230—Farm Power	4	Agriculture elective	3
Speech 11—Public Speaking	3	Engineering elective	3
Agriculture elective	4	Non-technical elective	3
	18		19

Non-technical electives may be selected from Rural Sociology 105, Political Science 101, History 2, 52, Psychology 1, Philosophy 4, and Sociology 1.

CURRICULUM IN CHEMICAL ENGINEERING

(E.C.P.D. ACCREDITED)

Degree: Bachelor of Science in Chemical Engineering

The standard four-year course in Chemical Engineering has been developed to qualify young men for positions in operation, design, construction, and management of manufacturing plants in which raw materials are subjected to chemical and physical changes to produce finished products.

This curriculum includes fundamental courses in mathematics through differential equations; inorganic, analytic, organic, and physical chemistry; physics; basic engineering, engineering graphics, mechanics, and strength of materials; chemical engineering principles, calculations, thermodynamics, design and economics, unit operations, process dynamics, and statistics. This curriculum provides the student with a broad foundation in the fundamental principles of those subjects which wide experience has shown to be essential for successful careers in the chemical engineering profession; or as engineers in any industry involving a succession of unit operations and unit processes.

To complete the requirements for the Bachelor of Science in Chemical Engineering degree in four years, students should follow the curriculum as outlined, although it is definitely advisable to take Organic Chemistry 233 and 238 in the Summer Session before the third year.

Students preparing to take Chemical Engineering should present for entrance as many units as possible in mathematics, chemistry, and physics. It is desirable, also, to have units in German, French, or Russian. While certain basic courses in English, economics, and public speaking are required in the regular curriculum, a student will obtain a broader education in economics, history, language, science, and engineering by taking the combined Bachelor of Science and Chemical Engineering courses. By a careful selection of electives, both degrees may be earned in five years.

In recognition of the increasing tendency on the part of industry to promote engineers to administrative and executive positions, the curriculum has been broadened to include more required work in the field of humanities. Additional elective courses may be selected from the humanities and business administration courses.

In addition to the demand for students trained in chemical engineering, there is considerable demand throughout the State for men trained in Materials Science Engineering. These fields are closely allied with chemical engineering. A basic course in Materials Science is required for all students seeking a degree in chemical engineering. In addition, students may elect courses in this area in their undergraduate and especially in their graduate programs. These courses are integrated with the chemical engineering courses, making use of many of the fundamental concepts common to these categories.

The department, along with the other departments of the College of Engineering and the School of Mines, is a part of the Engineering Experiment Station. The combined facilities of the department and the station are available for investigation and research. The greater number of projects are so selected that graduate students, and to some extent undergraduate students, participate in the program. The work of the Engineering Experiment Station thus is part of the educational program.

FIRST YEAR CHEMICAL ENGINEERING

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
G. 1—Engineering Lectures	Cr.	Chem. 2—Inorganic Chem.	4
Chem. 1—Inorganic Chem.	4	English 2—Comp. and Rhet.	3
English 1—Comp. and Rhet.	3	Math. 5—Analytical Geom.	4
Hist. 53—Modern America	3	M.E. 20—Eng'g Draw. and Graphics	3
Math. 3—College Algebra	3	Mil. Sci. 2 or Air Sci. 2	2
Math. 4—Plane Trig.	3	Phys. Ed. 2	1
Mil. Sci. 1 or Air Sci. 1	2		
Phys. Ed. 1	1		
	19		17

SECOND YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
Ch.E. 140—Ch.E. Calculations	2	English 126—Adv. Composition	3
Chem. 15—Quant. Analysis	3	T.A.M. 101—Statics	3
Math. 107—Calculus	4	Math. 108—Calculus	4
Mil. Sci. 3 or Air Sci. 3	2	Mil. Sci. 4 or Air Sci. 4	2
Physics 111—General Physics	5	Physics 112—General Physics	5
Speech 11—Public Speaking	3		
	19		17

THIRD YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
Ch.E. 205—Principles of Ch.E.	5	Ch.E. 207—Principles of Ch.E.	5
Chem. 233—Organic Chem.	4	Chem. 238—Organic Chem.	4
Chem. 260—Physical Chem.	4	Chem. 261—Physical Chem.	4
Econ. 1—Prin. of Economics	3	Econ. 2—Prin. of Economics	3
Math. 253—Adv. Applied Math.	3	T.A.M. 102—Mech. of Materials	3
	19		19

FOURTH YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
Ch.E. 211—Chem. Eng'g. Lab.	2	Ch.E. 212—Chem. Eng'g Lab.	2
Ch.E. 283—Process Dynamics	3	Ch.E. 248—Design or Experiments	2
Ch. 242—Ch.E. Thermodynamics	3	Ch.E. 243—Ch.E. Thermodynamics	3
Ch.E. 272—Ch.E. Design	3	Mat.E. 250—Physical Metallurgy	3
E.E. 105—Electrical Fundamentals	4	Ch.E. 273—Ch.E. Design	3
G. 100—Inspection Trip	Cr.	*Electives	6
*Electives	4		
	19		19

*At least 6 of the 10 hours must be selected from the following subjects; English, Language (6 hr. minimum), Psychology, History, Political Science, Sociology, Economics, Commerce.

Materials Science Engineering

Admission. The graduate program in Materials Science Engineering leading to the degree of Master of Science in Engineering is open to any graduate of an accredited engineering curriculum, and is administered by the Department of Chemical Engineering.

Courses. In general, the courses required in this program are Physics 270 and 271, Ch.E. 248, and Mat.E. 250, 255, 260, 265, 269 and 397. A satisfactory thesis is required. It is suggested that electives be chosen from the group Mat.E. 252, 253, 261, 262, 263, 350, 351, 352, 360, 361, Ch.E. 341 and Nuc.E. 392. Other elective courses may be used by permission of the program co-directors.

Facilities. The specialized facilities for Materials Science Engineering include well equipped laboratories for the complete examination and testing of materials including ceramics, metals, alloys and synthetics, and for research in these areas. In addition, the laboratory facilities of other departments may be utilized as needed.

Nuclear Engineering

Admission. The program for the Degree of Master of Science in Nuclear Engineering is administered by the Department of Chemical Engineering. The work offered in the department has been approved by the Atomic Energy Commission for recipients of Atomic Energy Commission Special Fellowships in Nuclear Energy Technology.

Before being admitted to candidacy for the Degree of Master of Science in Nuclear Engineering, the prospective student must be admitted to the Graduate School. Applicants with the Degree of Bachelor of Science in one of the major branches of engineering from an accredited engineering department will be admitted, provided they have had a course in differential equations.

Courses. A fairly rigid curriculum is followed for the M.S.N.E. Degree. This is necessary in view of the fact that students of diverse backgrounds may be admitted for this degree.

The required courses for the degree are: Physics 225, 226, 287, 288; Nuc.E. 390, 391, 392, 393; and a research thesis. In addition, six hours of related elective courses are required. Approved electives include Math. 357 and 358; Ch.E. 306 and 344. Other elective courses may be taken, subject to the approval of the candidate's adviser.

Facilities. The specialized facilities for nuclear engineering include a swimming pool reactor, electronic nuclear reactor simulator, graphic sigma pile, a 500-curie radiation facility, and a modern radioisotopes laboratory for instruction and research. The various departments in the College of Engineering are also well equipped for a variety of research projects which are applicable to the field of nuclear technology.

CURRICULUM IN CIVIL ENGINEERING

(E.C.P.D. ACCREDITED)

Degree: Bachelor of Science in Civil Engineering

The Civil Engineering curriculum has been planned to give a broad coverage of those general and scientific subjects that form the foundation of all engineering and special training in the civil engineering field. General subjects are included in most of the semesters of the four-year program. These are intended to improve and enrich the student's understanding of man's relation to man and they have been classified as communications (English, public speaking, foreign languages), humanities (history, philosophy, psychology), and social consciousness courses (economics, political science, and sociology). In addition to drawing, physics, and mathematics, which form the roots of any engineering course, the student investigates such fields as chemistry and geology which give a breadth of scientific training.

A thorough study of the fundamentals of plane and topographic surveying is scheduled for the second year and the following summer. During this summer, the student spends five weeks at Camp R. L. Morris near Terra Alta, West Virginia, concentrating on field surveys. Training at the professional level in photogrammetry may me elected during the fourth year to round out this work.

Courses in theoretical and applied mechanics, thermodynamics, and electrical engineering furnish breadth of training in engineering subjects and depth of training comes from professional work in transportation, structural, or sanitary engineering, and soil mechanics, any of which may be the specialty of the civil engineer.

The civil engineering professional field is too broad to be covered thoroughly in a four-year course. For this reason, primary emphasis is placed on engineering fundamentals. A degree of professional specialization is still possible, however. The student, during his last year, may select specialized courses in the fields of transportation, sanitary engineering, structural engineering, or soil mechanics. If he prefers, he may elect to prepare a thesis or may elect upper-division courses from other engineering departments.

The State Road Commission of West Virginia and the Department of Civil Engineering offer a cooperative program in which the student divides his time between

formal education and practical experience. One or more semesters are spent each year pursuing the regular Civil Engineering curriculum in school and for the remainder of the time the trainee is employed by the State Road Commission, where all possible advantage is taken of the engineering theory which the student has studied.

The student's pace through the curriculum is determined primarily by his financial position. Upon successful completion of the program, the regular B.S.C.E. degree is granted and the trainee is offered an engineering position with the S.R.C.

FIRST YEAR CIVIL ENGINEERING

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
Chem. 1—Inorganic Chem.	4	Chem. 2—Inorganic Chem.	4
English 1—Comp. and Rhet.	3	English 2—Comp. and Rhet.	3
G. 1—Engineering Lectures	Cr.	Hist. 53—Modern America	3
Math. 3—College Algebra	3	Math. 5—Analytical Geom.	4
Math. 4—Plane Trig.	3	M.E. 26—Descriptive Geom.	2
M.E. 20—Eng'g. Draw. and Graphics	3	Mil. Sci. 2 or Air Sci. 2	2
Mil. Sci. 1 or Air Sci. 1	2	Phys. Ed. 2	1
Phys. Ed. 1	1		
	19		19

SECOND YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
Econ. 1—Prin. of Economics	3	C.E. 2—Surveying	3
Geol. 1—General Geology	3	Econ. 2—Prin. of Economics	3
Geol. 2—Geol. Lab.	1	T.A.M. 101—Statics	3
Math. 107—Calculus	4	Math. 108—Calculus	4
Mil. Sci. 3 or Air Sci. 3	2	Mil. Sci. 4 or Air Sci. 4	2
Physics 111—General Physics	5	Physics 112—General Physics	5
	18		20

C.E. 104—Summer Surveying (five weeks) 5

THIRD YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
C.E. 115—Fluid Mechanics	3	C.E. 170—Struct. Eng'g.	3
C.E. 116—Fluid Mechanics lab.	1	C.E. 280—Soil Eng'g.	3
C.E. 160—Struct. Analysis	4	C.E. 131—Highway Eng'g.	4
T.A.M. 102—Mechs. of Mat'ls.	3	C.E. 145—Water Supply and Sewerage	5
T.A.M. 104—Dynamics	3	T.A.M. 103—Mechs. of Mat'ls.	3
Math. 240—Differential Equat., or Math. 253—Adv. Appl. Math.	3		
English 126—Adv. Composition	3		
	20		18

FOURTH YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
C.E. 260—Indeterm. Struct.	3	C.E. 190—Contracts & Spec.	2
C.E. 275—Reinforced Concrete	3	C.E. 271—Struct. Design	3
C.E. 179—Eng'g. Mat'ls.	2	Speech 11—Public Speaking	3
E.E. 105—Electrical Fundamentals	4	M.E. 121—Thermodynamics	3
Non-technical elective	3	Non-technical elective	3
Technical elective*	3	Technical elective*	3
	18		17

*At least one technical elective must be taken within the Department of Civil Engineering.

Six hours of foreign language may be taken in place of Speech 11 and English 126. Technical electives must include at least one course in Civil Engineering. Non-technical electives must include 3 hours from each of the following groups:

Group 1—History, Psychology, Philosophy.
Group 2—Economics, Political Science, Sociology.

RECOMMENDED TECHNICAL ELECTIVES

C.E. 141—Railway Engineering	3	C.E. 261—Statically Indeterminate Structures	3
C.E. 197—Thesis	2-4	E.E. 106—Electrical Machinery	4
C.E. 210—Photogrammetry	3	E.M. 215—Industrial Safety Eng'g	2
C.E. 211—Geodesy	3	E.M. 286—Eng'g Economy	2
C.E. 220—Water Power Eng'g	2	C.E. 281—Foundations Eng'g.	3
C.E. 236—Highway Mat'ls. Lab.	3	C.E. 231—Concrete and Aggregates	3
C.E. 250—Water Purification	3		
C.E. 230—Traffic Eng'g.	3		

CURRICULUM IN ELECTRICAL ENGINEERING

(E.C.P.D. ACCREDITED)

Degree: Bachelor of Science in Electrical Engineering

The course in Electrical Engineering has been developed for the purpose of giving the student who completes the course general training in engineering fundamentals and broad training in the field of electrical engineering. Special training in the electrical power field or the communications field is available as electives in the senior year.

In the first two years of electrical engineering, the work is limited mostly to those subjects which are essential as preparatory courses for the more technical courses in the third and fourth years.

During the third year, fundamental courses in electrical engineering are introduced. An additional mathematics course of special importance to electrical engineering is included, as well as other fundamental engineering subjects.

In the fourth year the curriculum is made up almost entirely of courses in electrical engineering. During the year, the student elects a group of courses pertaining to the field of communications or to the field of electric power.

It will be observed that for many of the courses scheduled in this curriculum, the work of the classroom is supplemented by concurrent work in the laboratory or drafting room. By means of experimental work in the laboratory, followed with well-written reports and problems in the design of electrical apparatus, the student acquires a clearer conception of the facts and principles discussed in the classroom and also a working knowledge of the subject matter. All of this is essential if he is to become a successful electrical engineer.

In order that students may receive a broader training in the field of humanities, six hours of non-technical elective subjects are required. The non-technical electives should be selected from the subjects listed, following the curriculum listing.

FIRST YEAR ELECTRICAL ENGINEERING

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
Chem. 1—Inorganic Chem.	4	Chem. 2—Inorganic Chem.	4
English 1—Comp. and Rhet.	3	English 2—Comp. and Rhet.	3
G. 1—Engineering Lectures	Cr.	Math. 5—Analytical Geom.	4
Hist. 53—Mod. America, or M.E. 20—Eng'g Draw. and Graphics	3	M.E. 20—Eng'g Draw. and Graphics, or Hist. 53—Mod. America	3
Math. 3—College Algebra	3	Mil. Sci. 2 or Air Sci. 2	2
Math. 4—Plane Trig.	3	Phys. Ed. 2	1
Mil. Sci. 1 or Air Sci. 1	2		
Phys. Ed. 1	1		
	19		17

SECOND YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
E.E. 10—Intro. Elect. Eng'g	2	E.E. 120—Elect. & Magnetic Circuits	3
English 126—Adv. Composition	3	E.E. 121—Elect. Meas. Lab.	2
Math. 107—Calculus	4	Math. 108—Calculus	4
Mil. Sci. 3 or Air Sci. 3	2	Mil. Sci. 4 or Air Sci. 4	2
Physics 111—General Physics	5	Physics 112—General Physics	5
Speech 11—Public Speaking	3	T.A.M. 101—Statics	3
	19		19

THIRD YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
Econ. 1—Prin. of Economics	3	Econ. 2—Prin. of Economics	3
E.E. 125—A.C. Circuits	4	E.E. 132—Electromechanical Devices	4
E.E. 126—Elect. & Magnetic Fields	3	E.E. 150—Electronics	3
Math. 253—Adv. Applied Math.	3	E.E. 284—Transients	3
T.A.M. 104—Dynamics	3	T.A.M. 102—Mech. of Materials	3
Non-technical elective	3	Non-technical elective	3
	19		19

FOURTH YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
E.E. 233—Electromechanical Devices	4	C.E. 115—Fluid Mechanics	3
E.E. 252—Electronics	3	E.E. 287—Ind. Electronics & Control	3
E.E. 260—Transmission Lines	3	Electives	3
E.E. 262—Electron. & Commun. Lab.	2	Technical electives	9
M.E. 121—Thermodynamics of Eng'g	3		
Technical elective	3		
	18		18

ELECTIVES

Non-technical electives shall be selected from the following subjects: Economics, Management, a Language (6 hr. minimum), History, Humanities, Philosophy, Political Science, Psychology, Sociology.

Six hours of technical electives shall be selected from the electrical engineering courses in the 200 series.

The remaining six hours of technical electives shall be selected from the following: Advanced Mathematics or Physics, E.E. 104, M.E. 125, or any engineering course in the 200 series.

The three-hour electives in the senior year must be approved by the department.

CURRICULUM IN INDUSTRIAL ENGINEERING

(E.C.P.D. ACCREDITED)

Degree: Bachelor of Science in Industrial Engineering

Industrial Engineering is a relatively new branch of engineering. The industrial engineer must combine his knowledge of engineering principles with everyday manufacturing operations in order that the product be produced in sufficient quantities at minimum cost. The field of the industrial engineer is that of the process, production, and cost expert engaged in planning, organizing, improving, managing, and operating the various procedures in producing all kinds of manufactured products.

The purpose of the curriculum in industrial engineering is to provide training for those students who are interested in the managerial and technical activities of the engineering field. Industrial engineering is, basically, engineering with its foundation in mathematics and the sciences, with emphasis upon the human factors and the economic aspects which are essential in engineering work.

There are many new problems challenging industry. Industrial engineers are being called upon more and more to answer this challenge. Their job is to coordinate man, machine, and method into a smooth-running organization.

The first and second years are devoted to basic courses in English, mathematics, chemistry, physics, statics, mechanics of materials, graphics, and manufacturing processes which are essential to the more technical courses which follow in the third and fourth years.

Industrial engineering includes motion and time study analysis for work simplification and standardization, control of quality, control of quantity through use of production control techniques, and control of labor costs through use of such management activities as job evaluation and wage incentives.

The laboratories provide the student with practice in the various phases of industrial engineering. Facilities are also available for research and development of methods and procedures for manufacture and control.

Besides giving the engineering fundamentals, industrial engineering provides for basic course work in the fields of mechanical and electrical engineering. The studies provide for intensive training in the various branches of industrial engineering. The specialization courses starting in the junior year are planned for progressive instruction in the principles and techniques of industrial engineering as practiced in industry.

Statistics has been increasing steadily as a tool in industrial engineering. One of its greatest contributions in recent years has been in the control of quality of manufactured products by statistical method. Recent additions to the curriculum prepare students for more advanced statistical analysis, as may be applied to production and costs, as well as research. Among the newest courses, which advanced and graduate students may choose to investigate, are the concepts and theories of Operations Research, such as linear programming, queueing, theory of games and statistical inventory control.

West Virginia has many types of industries in which industrial engineers may be profitably employed. Greater efficiency in operations as well as the expansion of industrial activities in the State will maintain the need for graduates in this ever developing field.

FIRST YEAR INDUSTRIAL ENGINEERING

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
Chem. 1—Inorganic Chem.	4	Chem. 2—Inorganic Chem.	4
English 1—Comp. and Rhet.	3	English 2—Comp. and Rhet.	3
G. 1—Eng'g. Lectures	Cr.	Hist. 53—Modern America	3
M.E. 20—Eng'g. Draw. and Graphics	3	Math. 5—Analytical Geom.	4
Math. 3—College Algebra	3	Mil. Sci. 2 or Air Sci. 2	2
Math. 4—Plane Trig	3	Phys. Ed. 2	1
Mil. Sci. 1 or Air Sci. 1	2		
Phys. Ed. 1	1		
	19		17

SECOND YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
Econ. 1—Prin. of Economics	3	Econ. 2—Prin. of Economics	3
Math. 107—Calculus	4	English 126—Adv. Composition	3
Mil. Sci. 3 or Air Sci. 3	2	Math. 108—Calculus	4
Physics 111—General Physics	5	Mil. Sci. 4 or Air Sci. 4	2
Speech 11—Public Speaking	3	Physics 112—General Physics	5
		T.A.M. 101—Statics	3
	17		20

THIRD YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
I.E. 100—Manuf. Processes	3	E.E. 105—Electrical Fundamentals	4
I.E. 140—Motion & Time Study	3	I.E. 131—Fund. of Ind. Eng'g.	2
I.E. 151—Acct. for Engrs	4	I.E. 142—Production Control	2
I.E. 244—Eng'g. Statistics	3	I.E. 180—Intro. to Digital Computation	3
Math. 253—Adv. Applied Math.	3	I.E. 290—Ind. Statistics	2
T.A.M. 102—Mech. of Materials	3	M.E. 121—Thermodynamics	3
		T.A.M. 104—Dynamics	3
	19		19

FOURTH YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
C.E. 115—Fluid Mechanics	3	E.E. 205—Electrical Fundamentals	4
Mat.E. 250—Physical Metallurgy	3	I.E. 250—Elec. Comp. Data Proc.	3
I.E. 110—Tool Design	3	I.E. 292—Plant Layout & Design	3
I.E. 214—Adv. Analysis of Engr. Data	3	I.E. 294—Std. Mfg. Costs	3
I.E. 287—Engr. Economy	3	Psych. 115—Psychology of Ind.	3
M.E. 122—Mechanical Lab	1	Elective (I.E. Tech.)	3
Elective	3		
	19		19

Elective (I.E. Technical) must be taken from the Industrial Engineering courses listed under recommended electives.

Elective (no designation) may be selected from the recommended elective list, or an engineering course in the 200 series or from psychology, philosophy, economics, sociology, or foreign languages.

RECOMMENDED ELECTIVES

E.M. 215—Ind. Safety Eng'g	3	I.E. 211—Ind. Eng'g. Prob.	3
G. 190—Law for Engineers	3	I.E. 215—Stat. Decision Making	3
I.E. 200—Metal Cutting Theory and Practice	3	I.E. 254—Intro. to Oper. Research	3
		M.E. 250—Heat, Vent. & Air Cond.	3

CURRICULUM IN MECHANICAL ENGINEERING

(E.C.P.D. ACCREDITED)

Degree: Bachelor of Science in Mechanical Engineering

Mechanical engineers, who work in a wide variety of industries, make vital contributions to power generation, transportation, manufacturing, nuclear-energy developments, space exploration and other activities. For example, many of the engineers in the satellite and space programs are mechanical engineers working on re-entry problems, nose cones, rocket motors, guidance systems, and other associated problems.

Large numbers of mechanical engineers are employed in the following industries: electric power, electronics, automotive, chemical, petroleum production and refining, and many others.

The above list of industries could be extended to include virtually every industry; thus it is extremely important that mechanical engineering students are trained to deal effectively with general engineering problems. Adequate courses in the humanities, social consciousness, and communications are provided throughout the four years, to insure the development of a well-rounded individual who is capable of assuming a responsible position in society.

The first and second years are primarily devoted to the basic preparatory courses essential to the more technical courses which follow in the third and fourth years.

Basic engineering drawing courses provide a contact with engineering work during the first year and are given so as to thoroughly familiarize the student with graphical communication. Theoretical and laboratory instruction are provided to give a fundamental knowledge of machine tools and production methods.

Courses in mechanisms, statics, mechanics of materials, kinetics, dynamics, machine design, thermodynamics, and other technical courses provide an opportunity to apply the basic fundamental mathematics, physics, and chemistry. A sufficient amount of electrical engineering is given in the third and fourth years to enable the student to handle engineering operations involving electrical problems. The courses in thermodynamics provide a fundamental background in heat power.

Well-equipped laboratories are provided to supplement classroom instruction and to furnish a means of teaching experimental methods. The student is provided with the opportunity to observe phenomena and seek explanations, to test theories, to note contradictions, and interpret results. An opportunity is also provided for the student to become familiar with the test codes of recognized national societies.

Electives are provided that enable the student to specialize in a technical field and to acquire a broad cultural background.

The curriculum is highly technical, yet sufficiently broad to meet the requirements of industry and society. The young graduate ordinarily enters a manufacturing or operating organization, where opportunity is provided for his development in research, design, operation, sales, or administration, depending upon his interests and his aptitudes.

A student who desires a broader training in the liberal arts than is provided in the regular four-year curriculum may take a combined bachelor of science and mechanical engineering course. By a careful selection of electives and proper sequence of registration, both degrees may be earned in five years.

FIRST YEAR MECHANICAL ENGINEERING

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
Chem. 1—Inorganic Chem.	4	Chem. 2—Inorganic Chem.	4
English 1—Comp. and Rhet.	3	English 2—Comp. and Rhet.	3
Math. 3—College Algebra	3	Math. 5—Analytical Geom.	4
Math. 4—Plane Trigonometry	3	M.E. 26—Eng'g. Draw. and Graphics	2
M.E. 20—Eng'g. Draw. and Graphics	3	Psych. 1—Intro. to Psychology	3
Mil. Sci. 1 or Air Sci. 1	2	Mil Sci. 2 or Air Sci. 2	2
Phys. Ed. 1	1	Phys. Ed. 2	1
G. 1—Engineering Lectures	Cr.		
	19		19

SECOND YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
English 126—Adv. Comp.	3	T.A.M. 101—Statics	3
Math. 107—Calculus	4	Math. 108—Calculus	4
Physics 111—General Physics	5	Physics 112—General Physics	5
Speech 11—Public Speaking	3	Non-Technical Elective	3
Non-Technical Elective	3	Mil. Sci. 4 or Air Sci. 4	2
Mil. Sci. 3 or Air Sci. 3	2		
	20		17

THIRD YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
I.E. 100—Manufacturing Processes	3	E.E. 105—Electrical Fundamentals	4
Math. 253—Adv. Applied Math.	3	M.E. 112—Kinematics and Dynamics of Mach.	3
M.E. 120—Thermodynamics	3	M.E. 125—Thermodynamics	3
T.A.M. 102—Mech. of Materials	3	T.A.M. 103—Mech. of Materials	3
T.A.M. 104—Dynamics	3	M.E. 133 Mechanical Lab.	2
M.E. 109—Mechanism	2	C.E. 115—Fluid Mechanics	3
M.E. 132—Mechanical Lab.	1		
	18		18

FOURTH YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
E.E. 205—Electrical Fundamentals	4	I.E. 244—Statistics or	
Pol. Sci. 101—Intro. to Government	3	I.E. 287—Engineering Economy	3
M.E. 201—Design of Mach. Members	3	Mat.E. 250—Physical Metallurgy	3
M.E. 230—Heat Transmission	3	M.E. 203—Machine Design	3
Econ. 1—Prin. of Economics	3	Econ. 2—Prin. of Economics	3
Technical Elective	3	Technical Elective	6
	19		18

ELECTIVES

Non-technical electives must be selected from history, humanities, psychology, philosophy, or sociology.

Technical electives may be selected from the 200 series in advanced mathematics, advanced physics, or engineering.

The School of Mines

CURRICULA (E.C.P.D. ACCREDITED)

Degree: Bachelor of Science in Engineering of Mines

1. Four-year curricula leading to the degree of Bachelor of Science in Engineering of Mines, with options in mining engineering and in petroleum and geological engineering.

2. Combined science and engineering curricula extending over five or more years leading to the degrees of Bachelor of Science and Bachelor of Science in Engineering of Mines.

Mining Engineering deals with the exploitation, extraction, marketing, and utilization of minerals from within the earth. The role of the mining engineer is quite diversified and there are opportunities for technical specialization in prospecting, development, production, beneficiation, utilization, and marketing. Therefore, the mining engineer must be well trained in the fields of mining and geology and also in the principles of civil, electrical, and mechanical engineering as applied to the mining industry. With the present trend toward the use of engineers in industrial management and administrative positions, the mining engineer's training must also include economics, business, personnel management, and the various humanities.

The basic curricula in mining engineering are devoted to thorough training in mathematics, physics, chemistry, geology, English, and economics, together with engineering drawing and surface and underground surveying. Beginning with the third year, provisions are made for specialization in either of the two options.

Mining Engineering: Mining Engineering Option

In this option, the professional curriculum includes study of the geology and the engineering principles of blasting, materials handling, transportation, hoisting, water control, surface and underground systems of mining, roof control, ventilation, coal preparation, and structural design. Special consideration is given to the application of mining machinery with particular attention to power transmission and electric and hydraulic control systems.

Special courses in the design of surface and underground mining installations give the students opportunity for expression of the engineering principles developed in preceding phases of the work. The student receives an introduction to the management and social aspects through courses devoted to economic, social, governmental, labor, financial, and safety problems incident to the operation of a mining enterprise.

For those desirous of further or alternate specialization, electives in the fields of metal mining, mineral beneficiation, geology, fuel technology, mine power applications, metallurgy, industrial engineering, and mining economics are offered.

Local coal fields, mines, and preparation plants are used extensively for experimental, instructional, and field work.

FIRST YEAR MINING ENGINEERING

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
Chem. 1—Inorganic Chem.	4	Chem. 2—Inorganic Chem.	4
English 1—Comp. and Rhet.	3	English 2—Comp. and Rhet.	3
M.E. 20—Engineering Drawing	3	Math. 5—Analytical Geom.	4
Math. 3—College Algebra	3	M.E. 26—Descriptive Geometry	2
Math. 4—Plane Trig.	3	Hist. 53—Modern American History*	3
Mil. Sci. 1 or Air Sci. 1	2	Mil. Sci. 2 or Air Sci. 2	2
Phys. Ed. 1	1	Phys. Ed. 2	1
E.M. 1—Freshman Orientation	0		
	19		19

*Or appropriate substitution.

SECOND YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
Math. 107—Calculus	4	Math. 108—Calculus	4
Geol. 1—Phys. Geol.	3	T.A.M. 101—Statics	3
Chem. 163—Phys. Chem.	4	English 6—American Literature	3
Phys. 111—Gen. Physics	5	Phys. 112—Gen. Physics	5
Mil. Sci. 3 or Air Sci. 3	2	E.M. 106—Mineralogy	2
		Mil. Sci. 4 or Air Sci. 4	2
	18		19

SUMMER

E.M. 102—Summer Mine Surveying (five weeks) 6

THIRD YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
E.E. 105—Elect. Fundamentals	4	E.E. 205—Elect. Fundamentals	4
Math. 253—Appl. Math.	3	Econ. 2—Princ. of Econ.	3
T.A.M. 102—Mech. of Mat'ls.	3	T.A.M. 103—Mech. of Mat'ls.	3
E.M. 107—Mining Methods	3	T.A.M. 104—Dynamics	3
E.M. 111—Introductory Mining	2	E.M. 212—Adv. Mining	3
Econ. 1—Princ. of Econ.	3	M.E. 121—Thermo. of Eng'g.	3
	18		19

FOURTH YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
C.E. 115—Fluid Mechs.	3	C.E. 170—Struct. Eng'g.	3
E.M. 213—Mine Vent.	3	E.M. 215—Indust. Safety Eng'g.	2
E.M. 217—Coal Preparation	3	E.M. 221—Mine Design	2
E.M. 220—Mine Design	2	E.M. 222—Mine Equip. & Mach.	3
Phil. 104—Princ. of Philosophy	3	E.M. 223—Mine Management	3
Electives	3	Non-technical electives	3
		G. 100—Inspection Trip	0
		Mat.E. 250—Physical Metallurgy	3
	17		19

RECOMMENDED TECHNICAL ELECTIVES

E.M. 208—Geol. Surveying	1	Ch.E. 281—Fuel Tech. (Solid Fuels)	3
E.M. 214—Mine Val., Cost Contrl., and Econ.	3	Ch.E. 282—Fuel Tech. (Gaseous and Liquid Fuels)	3
E.M. 218—Adv. Mineral Prep.	3	C.E. 206—Reinforced Concrete	3
E.M. 219—Adv. Mining Methods for Vein Deposits	3	C.E. 207—Foundations	3
E.M. 224—Mining Eng'g. Prob.	1 to 3	T.A.M. 200—Adv. Mech. of Mat'ls.	3
E.M. 227—Mine Power Appl.	2	I.E. 140—Motion & Time Study	3
E.M. 228—Mine Equip. & Mach. Controls	3	Geol. 151—Struct. Geol.	3
E.M. 230—Elements of Geop. Prosp.	3	Geol. 275—Coal Geol.	4
Econ. 115—Labor Prob.	3	Mangmnt. 217—Personnel Mngmnt.	3
		G. 190—Law for Engineers	3

Non-technical electives must be approved by the student's adviser.

Mining Engineering: Petroleum and Geological Engineering Option

This option is planned to meet the needs of the student specializing in petroleum engineering and for those interested in the geological aspects of mining engineering.

The petroleum engineer must be well versed in the identification and interpretation of geologic features related to the occurrence and recovery of oil and natural gas. The study of geology is emphasized in the petroleum and geological curriculum and is supplemented by thorough treatment of the engineering principles related to the development, production, transportation, marketing, and utilization of oil and natural gas. Local production and gas storage fields, secondary recovery projects, compressor stations, and refineries provide excellent opportunity for field study, and the petroleum engineering laboratories are particularly well equipped.

There is a growing demand for the mining geologist with thorough training in the fundamentals of engineering in general and mining engineering in particular who is especially qualified to analyze the geologic features of a mining property as related to valuation and development methods. Opportunities for the mining geologist are offered by mining companies, equipment manufacturers, the various state and federal agencies, and by business organizations having a secondary interest in mining resources, such as investment houses, railroads, and chemical producers.

The fundamentals of engineering are combined with the study of geology throughout the curriculum. The geology courses prescribed for the petroleum program treat the origin, properties, accumulation, and geographic distribution of oil and natural gas. Related courses in oil and gas production, core analysis, oil refining, and petroleum property management deal with the chemical and physical properties of oil and natural gas, their extraction, and subsequent processing, and the valuation of petroleum properties and marketing.

An introductory course in geophysical methods as applied to prospecting for oil and natural gas included in the basic curriculum acquaints the student with the equipment, methods, and calculations used, and gives an opportunity for field practice with the various instruments and devices employed. The problems of natural gas measurement and distribution are particularly stressed and special laboratories for this phase of the work are provided.

Supplemental courses in English, public speaking, history, economics, and business law provide for a well-balanced educational program that equips the graduate for engineering careers in both technical and administrative fields.

FIRST YEAR PETROLEUM AND GEOLOGICAL ENGINEERING

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
Chem. 1—Inorganic Chem.	4	Chem. 2—Inorganic Chem.	4
English 1—Comp. and Rhet.	3	English 2—Comp. and Rhet.	3
M.E. 20—Engineering Drawing	3	Math. 5—Analytical Geom.	4
Math. 3—College Algebra	3	M.E. 26—Descriptive Geom.	2
Math. 4—Plane Trig.	3	Hist. 53—Modern American History*	3
Mil. Sci. 1 or Air Sci. 1	2	Mil. Sci. 2 or Air Sci. 2	2
Phys. Ed. 1	1	Phys. Ed. 2	1
E.M. 1—Freshman Orientation	0		
	19		19

SECOND YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
Phys. 111—Gen. Physics	5	Phys. 112—Gen. Physics	5
Math. 107—Calculus	4	Math. 108—Calculus	4
Chem. 163—Phys. Chem.	4	E.M. 106—Mineralogy	2
Geol. 1—Gen. Geol.	3	T.A.M. 101—Statics	3
Mil. Sci. 3 or Air Sci. 3	2	English 6—American Literature	3
		Mil. Sci. 4 or Air Sci. 4	2
	18		19

*Or appropriate substitution.

SUMMER

E.M. 102—Summer Mine Surveying (five weeks) 6

THIRD YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
Math. 253—Appl. Math.	3	E.M. 204—Oil & Gas Prod.	3
Geol. 3—Hist. Geol.	3	E.M. 236—Hydrocarbon Phase Behavior	3
Econ. 1—Prin. of Econ.	3	Econ. 2—Prin. of Econ.	3
M.E. 121—Thermo. of Eng'g.	3	Phil. 104—Princ. of Philosophy	3
T.A.M. 102—Mech. of Mat'ls.	3	T.A.M. 103—Mech. of Mat'ls.	3
E.M. 201—Oil Field Devel.	3	T.A.M. 104—Dynamics	3
	18		18

FOURTH YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
E.M. 216—Petrol. Eng'g. Design	2	E.M. 203—Petrol. Prop. Val.	2
E.M. 230—Elem. of Geop. Prosp.	3	E.M. 205—Gas Meas. Eng'g.	2
E.M. 232—Petrol. Resrv. Eng'g.	3	E.M. 235—Fund. of Well Logging	3
Ch.E. 286—Petrol. Tech.	2	Mat.E. 250—Physical Metallurgy	3
E.E. 105—Elect. Fund.	4	C.E. 115—Fluid Mech.	3
Geol. 151—Struct. Geol.	3	Geol. 272—Petrol. Geol.	3
Non-tech. electives	2	Tech. electives	2
		G. 100—Inspection trip	0
	19		18

RECOMMENDED ELECTIVES

E.M. 207—Intro. Seismology	1	Geol. 4—Hist. Geol. lab.	1
E.M. 208—Geol. Surveying	1	Geol. 161—Field Geol.	3
E.M. 214—Mine Val., Cost Contrl., and Econ.	3	Geol. 170—Nat. Res. and Geol. of W. Va.	2 or 3
E.M. 215—Indust. Safety Eng'g.	2	Geol. 172—Econ. Geol. (Non-metallic)	3
E.M. 224—Mining Eng'g. Prob.	1 to 3	Geol. 271—Econ. Geol. (Ore Depos.)	3
E.M. 237—Comp. & Prop. of Oil Well Drilling Fluids	3	Ch.E. 282—Fuel Tech. (Gaseous and Liquid Fuels)	3
E.M. 231—Geophys. Prosp. Lab.	1	C.E. 206—Reinforced Concrete	3
E.M. 238—Oil and Gas Law	2	M.E. 270—Indust. Lubr.	3
E.M. 239—Adv. Reservoir Eng'g.	3	Econ. 115—Labor Prob.	3
Geol. 2—Gen. Geol. lab.	1	T.A.M. 200—Adv. Mech. of Mat'ls.	3

Non-technical electives must be approved by the student's adviser.

FIVE-YEAR CURRICULA

Degree: Bachelor of Science in conjunction with a degree in engineering or mining engineering.

These curricula are designed to meet the needs of students who wish to receive a broader training than is provided in the four-year program. They also enable the student to take lighter schedules than are required in the four-year curricula.

(A) Requirements for the degree of Bachelor of Science, to be conferred at the end of the fourth year, where the student's grade-point average is 2.5 or over, or at the time of the conferring of the engineering degree where the grade-point average is below 2.5.

(1) The requirements of the first three years of any four-year engineering curriculum.

(2) a. Twelve semester hours of one foreign language, where no secondary school entrance credits have been allowed, or

b. Six semester hours at intermediate level, where two units of entrance credits have been allowed in the same foreign language.

(3) Electives from the following groups, amounting to six semester hours where (2a) applies and twelve semester hours where (2b) applies.

a. Not more than three hours each of English, history, and speech.

b. Not more than six hours each in any one or more than the following groups: foreign language (other than specified above); journalism; commerce, political science; and philosophy, psychology, and sociology.

(B) Requirements for the Bachelor of Science degree in engineering or mining engineering, to be conferred on completion of the work of the fifth year.

GRADUATE CURRICULA

Graduate work leading to the degree of Master of Science in Engineering is offered in all departments. In certain departments courses leading to the degree of Doctor of Philosophy are also offered. The student who plans to pursue graduate work is directed to the courses as outlined in the *Announcements* of the Graduate School. Seniors within ten semester hours of graduation may petition the Dean of the Graduate School and receive credit towards a Master's degree for work taken beyond the requirements for a Bachelor's degree.

SPECIAL ENGINEERING CURRICULA

1. *Elective Groups for Students in Other Colleges.* Candidates for degrees other than engineering degrees, and special students in any department of the University, are permitted to elect subjects in the College of Engineering and the School of Mines, provided, in each case, they have had the subjects specified as prerequisites. Students who wish to take a general classical or scientific course of study before taking the engineering curriculum are advised to carry their mathematics as far as called for by the engineering curriculum, and to take some elective work in the College of Engineering.

2. *Partial Curriculum.* Students who have not the time or are otherwise unable to take the full curriculum will be allowed to take a special or partial curriculum, consisting of such studies as they are prepared to take, provided such curriculum shall have been approved by the adviser. For information as to requirements for admission as special students, see page 72.

PROFESSIONAL DEGREES

The University confers the following professional degrees: Aero-Space Engineer (A.E.), Chemical Engineer (Ch.E.), Civil Engineer (C.E.), Electrical Engineer (E.E.), Mechanical Engineer (M.E.), and Engineer of Mines (E.M.).

The professional degree is conferred upon graduates of the College of Engineering and of the School of Mines of West Virginia University on the basis of practical experience and study in absentia, the presentation of a thesis, and oral final examination.

To be eligible, a candidate for a professional degree must have been in active practice of his profession for at least five years since receiving his first degree, and must have been in responsible charge of important work at least two years.

Application for registration as a candidate for a professional degree should be made not later than October 1 in the academic year in which the degree is desired. Detailed regulations and registration blanks may be obtained from the Dean of the College of Engineering, or from the Dean of the School of Mines.

Courses of Instruction*

AERO-SPACE ENGINEERING

Professors Seltzer and Squire; Associate Professor Ulrich; Instructor Walters.

Undergraduate Division

A.E.

116. Aircraft Detail Design. II. 2 hr. PR: M.E. 26. Detail drawing of airplane components. Use of Aircraft Standards and drafting procedures. Development of contoured surfaces and projections. Methods of production and fabrication. 6 hr. lab.

201. Elementary Aerodynamics. I. 3 hr. PR: T.A.M. 101, Physics 111 or equivalent. Physical properties of air, airfoils, effect of planform, induced drag, parasite drag. Engine characteristics, propellers. Airplane performance at sea level and altitude. 3 hr. rec.

202. Aerodynamics. II. 3 hr. PR: Math. 253; A.E. 201, and/or conc: C.E. 115. Steady flow of incompressible and compressible fluids, dimensional analysis, viscous flow. Stream functions of two dimensional ideal flows, boundary layer theory. 3 hr. rec.

203. Applied Aerodynamics I. 3 hr. PR: A.E. 209. Chordwise and spanwise air-load distribution for plain wings, wings with aerodynamic and geometric twist, wings with deflected flaps, and wings with ailerons deflected. Section induced drag characteristics. 3 hr. rec.

205. Experimental Aerodynamics. I. 2 hr. PR: A.E. 202. Wind tunnel testing methods and equipment and wind tunnel boundary corrections. Experiments include: Yaw characteristics of Pitot-static tubes, pressure distribution on wings and circular cylinders, boundary layer determination, determination of wind tunnel turbulence, force tests of wings and airplane models, stability and performance determination and corrections for scale effect. 1 hr. lec., 3 hr. lab.

207. Aerodynamic Design. I. 3 hr. PR: A.E. 209. Preliminary design of aircraft. Inboard profiles, design, weight and balance calculations; three view drawings. Airplanes are designed to specification with respect to performance and stability. 1 hr. lec., 6 hr. lab.

208. Flight Testing. I, II. 2 hr. PR: A.E. 209. Flight test theory and practice. Data on stability and performance taken in Cessna 182 airplane. Flight test data reduction practice. 1 hr. lec., 3 hr. lab.

209. Aircraft Performance and Stability. II. 4 hr. PR: A.E. 201. Effect of superchargers and constant speed propellers on airplane performance. Per-

*Courses marked by an asterisk may be taken as undergraduate work by students in other colleges and schools.

formance charts. Gas turbine-jet airplane performance. Helicopter performance. Aircraft stability and control. 3 hr. lec.

210. Basic Aircraft Structures. II. 3 hr. PR or conc: T.A.M. 103. Design of elementary structural forms, truss analysis, and use of thin sheet in aircraft. Deflection by Virtual Work. Least Work and Williot Diagram. 3 hr. lec.

211. Redundant Aircraft Structures. I. 3 hr. PR: A.E. 210 or equivalent. Continuation of A.E. 210. Analysis and design of statically indeterminate structures used in aircraft. Design for achieving high strength/weight ratios. 3 hr. lec.

212. Applied Aircraft Design. II. 3 hr. PR: A.E. 207, 211, or consent. Structural design of airframe members to F.A.A. requirements. The work is performed on the airplane designed in A.E. 207 during the previous semester. Layout and detail design of specified components are required. 1 hr. lec., 6 hr. lab.

213. Aircraft Structures Laboratory. II. 1 hr. PR: A.E. 211 or consent. Strength tests of aircraft materials, airplane center of gravity determination, static test of airplane ribs, bending and torsion of shell structures, compression tests of thin-walled structures. 3 hr. lab.

217. Aircraft Structural Design. I. 3 hr. PR: T.A.M. 103. Analysis and detail design of simple fittings, beams, welded structures, forgings, castings. Methods of production and fabrication. 1 hr. lec., 6 hr. lab.

218. Aeroelasticity. I. 3 hr. PR: A.E. 210. The study of vibrating systems of single degree and multiple degree of freedom, flutter theory and modes of vibration, wing torsional divergence and aileron reversal. 3 hr. lec.

220. Seminar. I, II. 2-6 hr. PR: Senior standing and permission of the instructor. Special material and projects.

222. Aircraft Propulsion. I, II. 2 hr. PR: A.E. 201, M.E. 121. Propeller theory, constant speed propellers. Basic requirements of propulsion systems, utilization of available energy, fuels, charge handling, combustion, performance, turbine engine characteristics. 2 hr. lec.

223. Aero-Thermodynamics. I. 3 hr. PR: M.E. 121. Application of the fundamental concepts and laws of thermodynamics to problems of gases in motion. The course includes first and second laws of thermodynamics, thermodynamic properties and diagrams, kinetic theory of gases, perfect fluid flows, and dimensional gas dynamics, subsonic and supersonic channel flow, normal and oblique shock waves, methods of characteristics, nozzle design. 3 hr. lec.

224. Aircraft Reaction Engines. II. 3 hr. PR: A.E. 223. In this course four jet powerplants are discussed: gas turbine, turbojets and turbopropellers, ramjet, and rocket engines. Primary emphasis is given to the gas turbine engines and components, although a comprehensive analysis of both ramjet and rocket engines is given. The first portion of the course is concerned with thermodynamic properties of gases, relations between jet propulsion parameters; analysis of performance of the different types of jet devices; control problems; theoretical studies of combustion of gases. The second portion deals with theoretical and experimental methods of different types of jet devices design, influences of engine characteristics on airplane performance and design. Mechanical aspects of jet engines. 3 hr. lec.

225. Principles of Guided Missile Design. II. 3 hr. A.E. 223. PR or conc: A.E. 224. Preliminary design. Drag of bodies, lift and pitching moment. Stability of bodies of revolution. Trajectories of ballistic missiles. Aerodynamic problems depending on the type and mission of the guided missiles. Static and dynamic stability of guided missiles. Factors affecting aerodynamic stability. Control and guidance systems. Elementary rocket propulsion. Missile operation.

280. Aeronautical Problems. I, II. 1-3 hr. Upper division and graduate.

299. Thesis. I, II. 2-6 hr. PR: Senior standing and permission of the instructor.

Graduate Division

351. Dynamics of Viscous Fluids. I, II. 3 hr. PR: A.E. 202. Outline of fluid motion with friction. Comparison between the theory of perfect fluids and experiment. The boundary layer concept, separation and vortex formation. Stokes' law of friction. General properties and exact solution of the Navier-Stokes equations. Exact solution of the steady and non-steady boundary layer equations in two-dimensional motion. Boundary layers in compressible flow. Fundamentals of turbulent flow. The characteristic parameters of a boundary layer. Three-dimensional boundary layers. Inductive theory of turbulence due to H. Reichard. Introduction to statistical theories of turbulence. Mixing theory for separating and separated boundary layer flow. Determination of profile drag. 3 hr. lec.

352. Internal Aerodynamics. I, II. 3 hr. PR: A.E. 223. Systematic and comprehensive treatment of the flow characteristics of diffusers in general and inlet diffusers in particular. Supersonic inlet diffusers for turbojet and ramjet. Energy equation and related thermodynamics concepts as related to internal aerodynamics. Diffusers with the normal shock; flow process and efficiency in one dimensional analysis. Analysis of a two-dimensional multiple shock system for optimum pressure recovery. Experimental data and comparison with analysis. Diffusers with variable geometry, and diffusers with external compression. Spike diffusers with subcritical and near critical non-stationary flow process (buzz frequency and intensity). 3 hr. lec.

353. Advanced Analytical Aerodynamics. I, II. 3 hr. PR: A.E. 202. The general properties of fluid motion, continuity, dynamics equation, pressure, energy and vorticity are studied in the light of the vector formulation. Green's Theorem. Detailed discussion of two-dimensional motion from the unified standpoint of the complex variable; Cauchy-Riemann equation. Theorem of Kutta and Joukowski, Stokes, stream function and application of conformal mapping to three-dimensional problems. Blasius Theorem, resultant fluid forces and moments. Vortex motion in general with application to the airfoil of finite span. Kirchoff's equations in vector form for research in stability problems. Examples of viscous flow, description of the boundary layer, differential equation of the boundary layer. 3 hr. lec.

354. Advanced Topics in Aerodynamics. I, II. 3 hr. PR: A.E. 209. Dynamics stability. Advanced theoretical aerodynamics. Comparison of compressible and incompressible flow influence on aircraft. Application of boundary layer theory and aerodynamic design problems. Obtaining aerodynamic characteristics of the airplane from dynamic flight test techniques, such as frequency response, and transient response methods. Problems of automatic control. 3 hr. lec.

355. Gas Dynamics. I, II. 3 hr. PR: A.E. 223. In this course, the fundamental theoretical framework for the aerodynamics of compressible flow is treated and the important mathematical theories and graphical-numerical approximation methods are developed. The first portion of this course treats, in brief: Difference between subsonic and supersonic flow; distinction between compressive and expansive flow and the application of the energy equations to compressible fluid flow. The second portion covers: theory of two-dimensional flow; interaction between shock and expansion waves; the differential equation for rotational flow. Determination of the properties of supersonic profiles using the method of characteristic and theory of shock waves. Theory of three-dimensional flow; existence of potential flow in three-dimensional phenomena. Two- and three-dimensional supersonic wing. Problem in transonic and hypersonic flow. Conical flow. Applications to supersonic aircraft design. 3 hr. lec.

356. Instrumentation and Techniques of Supersonic Flow. I, II. 3 hr. Principles, uses and limitation of measuring devices used in supersonic flow. Measurement of the physical quantities of the flow in aerodynamic phenomena. Determination of the values of the static pressure and the Mach Number with pressure measurements. Temperature measuring devices and methods. Measurements of density; interferometers. Determination of density variation with methods using deviation of the rays; shadow system and Schlieren system. Photographic measuring techniques. Hot wire anemometer; specific problems. 2 hr. lec., 3 hr. lab.

357. Special Problems. I, II. 2-4 hr. PR: Permission of department chairman. A course for graduate students in the non-research program. The student will select a specialized field and follow a course of study in that field under the supervision of a counselor.

358. Dynamics of Trajectories. I, II. 3 hr. PR: Math. 245, 251; A.E. 223, 224. Determination of circular, elliptical, parabolic, and hyperbolic orbits. Study of the shape of trajectories, the time history of position, velocity, acceleration, kinetic and potential energies. Calculation of the required energies, velocities, and launch directions to achieve a desired target. Problems on planar and three-dimensional motion. Kepler's equation, perturbations, establishment of the orbital plane. Problems on propulsion for multistage rockets.

359. Aerodynamics Heating. II. 3 hr. PR: Math. 253, A.E. 351 or M.E. 330. Heat transfer problems associated with high speed flight. Laminar boundary layers with temperature dependent properties. Empirical theories of compressible turbulent flow. Heat transfer in slip flow and free molecular flow.

372. Aeroelasticity. I, II. 3 hr. PR: A.E. 218. Deformation of structures under static and dynamic loads, flutter of straight and swept wings, disturbed motion of an elastic airplane, dynamic response in gusts and landings, the aeroelastic model theory.

373. Dynamic Loads. I, II. 3 hr. PR: A.E. 203, 218. Dynamics of a particle, lift distribution during accelerated maneuvers, beam bending and torsion with unsteady loads, empennage loads during dynamic flight conditions, landing impact loads.

374. Materials and Theories of Failure. I, II. 3 hr. PR: A.E. 211. Failures in simple stress states, combined stress states; method of fatigue failures, minimum weight structures, evaluation of material to resist design load conditions.

375. Advanced Aircraft Structures. I, II. 3 hr. PR: A.E. 211. Incomplete tension fields, critical loads, torsional column failure, instability of flat sheets, cylindrical structure, special methods of analysis.

397. Research. I, II. 1-6 hr. Advanced research or special investigations on some topic relating to aero-space engineering.

AVIATION

Professor Seltzer; Flight Instructors Bennett, Mood, and Wolfe.

Undergraduate Division

*170. Aviation Ground School. I, II, S. 2 hr. Nomenclature of aircraft, civil air regulations, navigation, meteorology, and aircraft engines.

*171. Flight Training. I, II, S. 1 hr. Beginning flight instruction and training consisting of 20 hours of flight time. The student will have approximately 12 hours of dual and 8 hours of solo flying in this course. Special flight fee $100, payable at Registration.

*Courses may be taken by students in colleges other than the College of Engineering.

*172. Flight Training. I, II, S. 1 hr. Continuation of A.E. 171, consisting of 20 hours of flight time. Special flight fee of $100, payable at Registration.

*173. Advanced Flight Training. I, II, S. 1 hr. Continuation of A.E. 172, consisting of 20 hours of flight time. Special fee of $100, payable at Registration.

*175. Advanced Flight Training. I, II, S. 1 hr. Continuation of A.E. 173. Consisting of 20 hours of flight time. Special flight fee of $100, payable at Registration.

*176. Advanced Flight Training. I, II, S. 1 hr. Continuation of A.E. 175. Consisting of 20 hours of flight time. Special flight fee of $100, payable at Registration.

*177. Advanced Flight Training. I, II, S. 1 hr. Consisting of 20 hours of flight time. Special flight fee of $100, payable at Registration.

AGRICULTURAL ENGINEERING

Professors Longhouse and Dickerson; Associate Professor Emerson; Assistant Professor Phillips; Instructors Collins and Elliott.

Undergraduate Division

Ag.E.

10. Principles of Agricultural Engineering. I. 3 hr. PR: Math. 4. A general course introducing the several fields of agricultural engineering and how they are applied in agriculture and industry. 3 hr. rec.

100. Farm Structures. II. 3 hr. PR: T.A.M. 102. Structural design and functional requirements of farm service buildings. 2 hr. rec., 3 hr. lab.

110. Application of Electricity to Agriculture. II. 3 hr. PR: E.E. 106. Economic application of electric light, heat, and power. 2 hr. rec., 3 hr. lab.

140. Soil and Water Conservation. I. 3 hr. PR: C.E. 115. Engineering principles and practices in conservation, utilization, and management of soil and water resources. 2 hr. rec., 3 hr. lab.

180, 181. Assigned Topics. I, II. 1-4 hr. per semester.

190. Farm Machinery. II. 3 hr. PR: M.E. 113. Construction, operation, adjustment, and testing of farm machines. 2 hr. rec., 3 hr. lab.

200. Seminar. I. 1 hr. PR: Senior standing.

220. Agricultural Process Engineering. II. 3 hr. PR: C.E. 115, M.E. 121. Application of the fundamentals of engineering to agricultural engineering processes. 2 hr. rec., 1 hr. lab.

230. Farm Power. I. 4 hr. PR: M.E. 121. Fundamental theories underlying design and operation of internal combustion engines used in agriculture. 3 hr. rec., 3 hr. lab.

240. Hydrology. I. 3 hr. PR: C.E. 115. The study of a hydrologic cycle with emphasis on precipitation and runoff as related to design of hydraulic structures, soil and water conservation, and flood control. 3 hr. rec.

Graduate Division

320, 321. Special Topics. I, II, S. 1-6 hr. (For the Master's Degree, Special Topics ordinarily may count 2 to 4 hr.; maximum credit, 6 hr.).

397. Research. I and II. 1-6 hr.

CHEMICAL ENGINEERING

Professors Simons, Fairbanks, P. R. Jones, Kent, and Koehler; Associate Professor Wen; Assistant Professors Crockett, Galli, and Mahoney; Lecturer Sebastian; Instructor Boyles.

Undergraduate Division

Ch.E.

*140. Chemical Engineering Calculations. I. 2 hr. PR: Chem. 2 and Math. 3. Industrial stoichiometry; industrial calculations involving material and energy balances. 2 hr. rec.

205. Principles of Chemical Engineering. I. 5 hr. PR or conc: Chem. 260. Fundamentals and application of the unit operations of chemical engineering. 2 hr. rec., 6 hr. computation lab.

207. Principles of Chemical Engineering. II. 5 hr. Continuation of Ch.E. 205. 3 hr., rec., 6 hr. computation lab.

211, 212. Chemical Engineering Laboratory. I, II, S. 2 hr. PR: Ch.E. 207. Experimental work in the unit operations; practice in writing engineering reports. 6 hr. lab.

224. Unit Organic Processes. II. 3 hr. PR: Chem. 238 and Ch.E. 207. Unit processes involved in the synthetic organic chemicals industries. 3 hr. rec.

*234. Chemical Technology. I, S. 2 hr. PR: Chem. 233. A survey of some of the manufacturing procedures employed in the process industries, including theory, equipment, and economics. Primarily for Chemistry majors. 2 hr. rec.

*235. Chemical Technology. II, S. 2 hr. PR: Chem. 233. Similar to Ch.E. 234. 2 hr. rec.

242. Chemical Engineering Thermodynamics and Kinetics. I. 3 hr. PR: Ch.E. 140, 261. Applications of material and energy balances; thermophysics and thermochemistry; thermodynamics of ideal and non-ideal systems; expansion, compression, and power plant cycles; fugacity, activity, and chemical potential; chemical reaction equilibria; physical equilibria. Kinetics of simple and complex reactions; development of rate equations. Kinetics of vapor phase-catalytic reactions; development of rate equations and determination of mechanism of reactions. Applications to reactor design. 3 hr. rec.

243. Chemical Engineering Thermodynamics and Kinetics. II. Continuation of Ch.E. 242. 3 hr. rec.

248. Statistical Design of Experiments. I, II. 2 hr. PR: Math. 253 or consent. Principles of statistics; analysis of variance; linear and curvilinear regression; factorial design including confounding, fractional factorial design, and composite design; planning of industrial experiments. 2 hr. rec.

272. Chemical Engineering Design. I. 3 hr. PR: Ch.E. 207, T.A.M. 102, and Econ. 2. Design of process equipment from economic, chemical and engineering considerations. Study of plant location and layout. 2 hr. rec., 3 hr. lab.

273. Chemical Engineering Design. II. 3 hr. Continuation of Ch.E. 272. 2 hr. rec., 3 hr. lab.

280. Chemical Engineering Problems. 1-6 hr. For junior, senior and graduate students.

*281. Fuel Technology. I. 2 hr. PR: Chem. 15. Technology of solid fuels. Classification and reserves. Analysis and testing. Origin, occurrence, composition,

and properties. Mining and methods of manufacture. Principles of carbonization, gasification, and combustion. Fuel engineering calculations. Nucleonic fuels and their use in nuclear power plants. Economic aspects. 2 hr. rec. Those desiring laboratory work will register in Ch.E. 280 for 1 hr.

*282. Fuel Technology. II. 2 hr. PR: Ch.E. 281. Technology of gaseous and liquid fuels. Classification and reserves. Analysis and testing. Origin, occurrence, composition, and properties. Methods of production. Natural gas and petroleum. Refining and cracking process. Manufactured fuel gases. Storage and transmission. Combustion processes and burner design. Gasification and combustion calculations. 2 hr. rec. Those desiring laboratory will register in Ch.E. 280 for 1 hr.

283. Process Dynamics. I, II. 3 hr. PR: Math. 253, Ch.E. 207. Introduction to automatic control and control loop concepts, measurement of variables, dynamic properties of instruments, process response, discussion of controller types, derivation of equations for first and second order control systems, derivation of equations for first and second order process, transient analysis of process and control systems, use of analogue computer for process simulation and solution of differential equations. 3 hr. rec.

284. Industrial Instrumentation and Control. I, II, S. 3 hr. PR: Math. 108. Discussion of process characteristics, theory and application of measuring means. Theory, modes and application of automatic control. Selection and characteristics of final control elements. 3 hr. rec.

286. Petroleum Technology. I. 2 hr. PR: Chem. 233. Discussion of crude oil desalting, distillation, natural gasoline recovery, thermal and catalytic cracking solvent refining, dewaxing, filtration, blending, and compounding of petroleum products. 2 hr. rec.

297. Thesis. I, II. 2-5 hr. A problem in chemical engineering or industrial chemistry is selected for investigation. A carefully prepared report is required. Open only to qualified seniors. 6-15 hr. lab.

Graduate Division

300. Seminar. I, II, S. 1-6 hr. Hours to be arranged.

302. Advanced Heat Transfer. I, II. 2-5 hr. PR: Ch.E. 207, 243, Math. 253. Theory of steady and transient conduction, radiation heat transfer, dimensional analysis and analogy, natural convection, forced convection, heating and cooling inside and outside tubes, finned tubes and compact heat exchangers, packed and fluidized system heat transfer, heat transfer in condensing vapor, heat transfer in boiling liquids and evaporation, high velocity flow heat transmission, application to process heat transfer and design. 3 hr. rec., 0-6 hr. lab.

304. Advanced Mass Transfer. I, II. 2-5 hr. PR: Ch.E. 207, 243, Math. 253. Theory of diffusion, interphase mass transfer theory, simultaneous mass and heat transfer, principles of design, equipment survey, mechanical operations, mass transfer performance, scale-up practices, mass transfer in solid-gas and solid-solid phases, liquid-liquid extractions. 3 hr. rec., 0-6 hr. lab.

306. Advanced Fluid Dynamics. I, II. 2-5 hr. PR: Ch.E. 207, 243, Math. 253. Vector and tensor analysis, differential equations of fluid flow, flow of nonviscous fluid, laminar flow, turbulent flow, analogy between fluid momentum, mass and heat transfer, dimensional analysis, the laminar sublayer, flow of fluid past immersed bodies, fluid dynamics of particle suspensions, flow of fluids through porous media, non-Newtonian fluid flow. 3 hr. rec., 0-6 hr.

307. Advanced Distillation. I, II, S. 2-5 hr. PR: Ch.E. 207 or Chem. 261. Advanced study of vaporization principles of separation of liquid mixtures, steam, batch, continuous, azeotropic, extractive, and molecular distillation. 3 hr. rec., 0-6 hr. lab.

323, 324. Advanced Unit Processes. I, II, S. 2-5 hr. PR: Chem. 238, Ch.E. 207. Advanced study of the unit processes with application to process development. 2 hr. rec., 0-9 hr. lab.

*340. Phase Equilibria. I, II, S. 2 hr. PR: Chem. 261. Interpretation, construction, and applications of one-, two-, and three-component diagrams, applications of the phase rule. 2 hr. rec.

341. Mathematical Methods in Chemical Engineering. I, II. 3 hr. PR: Math. 253. Emphasis is placed upon the formulation of the differential and difference equations, both ordinary and partial, governing chemical engineering operations. Analytic and numerical techniques used for their solutions include transform methods. 3 hr. rec.

344. Advanced Chemical Engineering Thermodynamics. I, II, S. 3 hr. PR: Ch.E. 243. Review of thermodynamic transformations, use of Jacobians; advanced applications to chemical and physical equilibria; development and applications of phase rule; equilibria diagrams for nonideal systems; determination and use of activity coefficients; methods of estimating thermodynamic functions; introduction to statistical mechanics. 3 hr. rec.

345. Advanced Chemical Engineering Kinetics. I, II, S. 3 hr. PR: Ch.E. 243. Applications of chemical kinetics to industrial reactor design; review of physical chemical principles; theories of reactions; design of batch and flow reactors; theories of catalysis; reactor mechanisms; data interpretation; applications to design of catalytic reactors; effects of diffusion on catalytic reactions. 3 hr. rec.

372. Advanced Chemical Engineering Design. I, II, S. 2-5 hr. PR: Ch.E. 273. Critical discussion of and practice in equipment-design methods. 2 hr. rec., 0-9 hr. lab.

383. Advanced Systems Engineering. I, II. 3 hr. PR: Ch.E. 283, 284. Control systems and the feed-back concept, transfer functions and mathematical analysis of dynamic equations, transient analysis and stability of control systems, frequency response of control system, thermal process dynamics, mass transfer dynamics, chemical process dynamics, use of analogue computer for study of system behavior, nonlinear systems and adaptive control, random response and filtering of noise. 3 hr. rec.

397. Research. I, II, S. 1-10 hr. PR: Ch.E. 207, 212. Suitable problem in chemical engineering, metallurgy, nucleonics, ceramics, or fuels is selected for investigation.

Materials Science Engineering

Mat.E.

*250. Physical Metallurgy. I, II. 3 hr. PR: Physics 112. Includes principles of extractive metallurgy, crystallography, plastic deformation, alloy diagrams, heat treating and corrosion. 3 hr. rec.

*252. Ferrous Metallurgy. I. 2 hr. PR or conc: Mat.E. 250. Includes the making, shaping, alloying, and heat treating of iron and steel. 2 hr. rec.

*253. Nonferrous Metallurgy. II. 2 hr. PR or conc: Mat.E. 250. Includes the nature of ores, beneficiation and extractive processes, refining, alloying and heat treating of major nonferrous metals. 2 hr. rec.

*255. Synthetic Materials. I, II. 3 hr. PR: Physics 112. Properties, uses and methods of production of synthetic materials such as plastics, elastomers, laminates, lubricants and miscellaneous materials of construction. 3 hr. rec.

*260. Physical Ceramics. I, II. 3 hr. PR: Physics 112. The electronic and crystalline structure of ceramic materials; structure of glasses; mechanical, chemical, electrical, thermal, and optical properties of ceramic materials; processing and utilization of ceramic materials. 3 hr. rec.

*261. Principles of Ceramic Engineering. I, II. 3 hr. PR: Mat.E. 260. Application of factorial design to the study of unit operations and unit processes in ceramics. 3 hr. rec.

*262. Refractories. I. 3 hr. PR: Physics 112. The structure, properties, processing, and uses of refractory materials. 3 hr. rec.

*263. Glass. II. 2 hr. PR: Physics 112. The structure, properties, processing, and uses of glass. 2 hr. rec.

*265. Materials Science Laboratory. I, II. 2 hr. PR: Mat.E. 250, 255, 260. Preparation and pretreatment of engineering materials for photomicrography and physcial inspection. 6 hr. lab.

*269. X-Ray Diffraction. II. 2 hr. The theory of x-ray diffraction and application to the analysis of crystalline materials, using the powder camera and x-ray diffractometer. Open to students in geology, chemistry, engineering, and related fields with permission of the instructor. 1 hr. rec., 3 hr. lab.

*350. Advanced Physical Metallurgy. I, II. 3 hr. PR: Mat.E. 250. Includes the principles of crystallization, plastic deformation, precipitation hardening, and the transformation of austenite. 3 hr. rec.

*351. Metallography Laboratory. I, II. 3 hr. PR: Mat.E. 265. Includes radiography, photomicrography, recrystallization, and heat treatment of metals both ferrous and nonferrous. 1 hr. rec., 6 hr. lab.

*352. Alloys. I, II. 3 hr. PR: Mat.E. 250. Includes the use of the phase rule, constitutional diagrams both binary and ternary, and fundamental principles involved in the formation of alloys. 3 hr. rec.

*360. Advanced Physical Ceramics. I. 3 hr. PR: Mat.E. 261. Structure analysis of crystalline and glassy materials and the effects on the physical properties. Special ceramic bodies and processing. 3 hr. rec.

*361. Advanced Ceramics Laboratory. II. 1 hr. PR: Mat.E. 360. Preparation, processing, and physical measurements of special ceramic bodies. 3 hr. lab.

*397. Research. I, II, S. 1-10 hr.

Nuclear Engineering

Nuc.E.

290. Introductory Nuclear Engineering. I, II. 3 hr. PR. Physics 112. Includes elementary nuclear physics necessary for understanding nuclear engineering. Design and operation of nuclear reactors, shielding, instrumentation, health physics, fuel cycles, uses of radioactive isotopes, nuclear propulsion. 3 hr. rec.

380. Advanced Independent Study. I, II. 1-3 hr. Special studies in fuel reprocessing, shielding, reactor technology, and related areas.

390. Analysis of Nuclear Energy Systems. I. 3 hr. PR or conc: Physics 225 or equiv., and Physics 287 or equiv. Probability concepts and nuclear cross sections. Multiplication constant and neutron flux. Diffusion theory. Homogeneous reactors: one group theory; multigroup theory. Heterogeneous reactors. Reflected reactors. Reactor kinetics. Control rod theory. Special considerations in analysis of hydrogeneous systems. 3 hr. rec.

391. Principles of Nuclear Reactor Engineering. II. 3 hr. PR: Nuc.E. 390. Thermal analysis of reactor systems. Shielding. Fuel element design. Reactor poisons. Instrumentation. Economics of nuclear systems. Radiation protection. Legal aspects. Radioactive waste disposal. 3 hr. rec.

392. Interaction of Radiation and Matter. I. 3 hr. PR or conc: Physics 225. Radiation damage models, effects of nuclear radiations on reactor components and other materials, experimental techniques. Industrial applications: process control, polymerization, sterilization, pasteurization. 3 hr. rec.

393. Nuclear Laboratory. II. 3 hr. PR or conc: Nuc.E. 390 or equivalent. Techniques of radiation measurements. Determination of neutron properties; diffusion length, albedo, etc. Exponential reactor parameters. Reactor simulation. Experiments with swimming pool reactor and cobalt-60 radiation facility. Dosimetry. 1 hr. rec., 6 hr. lab.

397. Research. I, II, S. 1-10 hr.

CIVIL ENGINEERING

Professors Baker and Schaub; Associate Professor Burchinal; Assistant Professors Jenkins and Moh; Instructors Ruth, McPherson, Hopson,† Michaels,† Seknicka,† and Thomas.†

Undergraduate Division

C.E.

*1. Surveying. II. 2 hr. PR: Math. 4. For non-civil engineering students. Elementary theory of measurement of distance, direction, and difference in elevation. Field work with transit, tape, level, stadia, and plane table. Office computation and plotting. 1 hr. rec., 3 hr. lab.

*2. Surveying. II. 3 hr. PR: Math. 4. Theory of measurements and errors; introduction to least squares: the terrestial and celestial spheres; figures of the earth; projections; the characteristics of instruments for measuring distance, direction, and elevation; basic field measurements and office computations. 2 hr. rec., 3 hr. lab.

*5. Land Surveying. I. 4 hr. PR: Math. 10. Primarily for forestry students. Theory and practice with compass, transit, level, stadia, and plane table; computations of area; astronomical observations; map plotting. 2 hr. rec., 6 hr. lab.

*6. Topographic Mapping. II. 2 hr. PR: C.E. 5. Primarily for forestry students. Topographic maps; surveys for roads and property lines; U. S. Public Land Surveys; practice in lettering, plotting, and inking of topographic maps. 1 hr. rec., 3 hr. lab.

104. Summer Surveying. S. (5 weeks). 5 hr. PR: C.E. 2. Further study of surveying instruments, including their geometry, accuracy, use, and adjustments; theory of solar and polaris observations, horizontal and vertical curves, earthwork measurement, triangulation, omitted measurements, and partition of area; the planning and design, the execution, and the testing of surveys for maps, hydrography, boundaries, routes, and construction operations; problems in field astronomy, plane table mapping, and leveling.

115. Fluid Mechanics. I, II, S. 3 hr. PR: or conc: T.A.M. 104. Fluid statics, laminar and turbulent flow of compressible and incompressible fluids, flow measurements, open channel flow, and kinetics of fluids. 3 hr. rec.

116. Fluid Mechanics Laboratory. I, II. 1 hr. PR or conc: C.E. 115. Measurement of the properties and flow characteristics of gases and liquids. Hydraulic machinery. 3 hr. lab.

†Part-time.

131. Highway Engineering. I. 4 hr. PR: C.E. 104. Highway administration, economics, and finance; planning and design; subgrade soils and drainage; construction and maintenance. Design of a highway. Center line and grade projections, earthwork and cost estimate. 3 hr. rec., 3 hr. lab.

141. Railway Engineering. II. 3 hr. PR: C.E. 104. Development and importance of the railroad industry. Principles of location, construction, operation, and maintenance.

145. Water Supply and Sewerage. II. 5 hr. PR: C.E. 115. Required quantity and quality of water; sources, treatment, pumping, and distribution of water; uniform and nonuniform flow in open channels, rainfall and runoff; design and operation of sewers; sewage treatment. 4 hr. rec., 3 hr. lab.

*160. Structural Analysis. I, II. 4 hr. PR or conc: T.A.M. 102. Analysis of stresses in statically determinate structures, reactions, shears, bending moments, and direct stresses due to fixed and moving loads; influence lines and loading criteria for beams and framed structures. 3 hr. rec., 3 hr. lab.

*170. Structural Engineering. I. 3 hr. PR: T.A.M. 102. Elements of analysis and design of structures of reinforced concrete, steel, and timber; primarily buildings. 3 hr. rec.

*179. Engineering Materials. I. 2 hr. PR: T.A.M. 103. Properties and behavior of materials used in engineering. 2 hr. rec.

190. Contracts and Specifications. II. 2 hr. PR: Senior standing or consent. Elements of contracts; contracting procedures; contract documents; preparation of specifications; legal relations, rights, and responsibilities of engineers. 2 hr. rec.

197. Thesis. I, II. 2 to 4 hr. Special design, investigation or original research on an assigned topic relating to Civil Engineering.

210. Photogrammetry. I. 3 hr. PR: C.E. 104. Geometry and interpretation of the aerial photograph; flight planning; radial-line control; principles of stereoscopy; plotting instruments. 2 hr. rec., 3 hr. lab.

211. Geodesy. II. 3 hr. PR: C.E. 104 and Math. 108. Precise base line measurements, triangulation and leveling, geodetic astronomy; figure of the earth, map projections; rectangular coordinate systems; least squares adjustment; gravity. 3 hr. rec.

216. Fluid Mechanics Laboratory. I, II. 2 hr. PR or conc: C.E. 115. Calibration of gages, meters, orifices, and weirs; pipe friction; loss in bends; impulse turbines; flow in open channels. 6 hr. lab.

221. Engineering Hydraulics. I, II. 3 hr. PR: C.E. 145 or consent. Fundamental principles of flow, similitude, flow measurement, water hammer and surging, channel transitions, gradually varied flow, wave motion and sediment transportation. Design of various elements of hydraulic structures. 3 hr. rec.

230. Traffic Engineering. I, II. 3 hr. PR: C.E. 131, T.A.M. 104. Principles of traffic operations. The characteristics of drivers, vehicles, and roadways that affect the performance of road systems. Traffic studies relating to origins and destination, accidents, parking, speed, and delays. Consideration of signs, signals, and markings. 3 hr. rec.

231. Concrete and Aggregates. I, II. 3 hr. PR: C.E. 131, 179, T.A.M. 103. Considerations and methods for the design of concrete mixes. Effect of air entraining agents and other additives. Studies of the influence of aggregate properties on the design and performance of concrete mixtures. An analysis of the methods of test commonly used for concrete and aggregates and the significance of these tests. 3 hr. rec.

236. Highway Material Laboratory. II. 2 hr. PR: T.A.M. 103. Testing of highway materials for compliance with specifications in the State Road Commission's Materials Testing Laboratory. 6 hr. lab.

251. Public Health Engineering. I, II. 3 hr. PR: C.E. 145. The engineering aspects involved in the control of the environment for the protection of the health and the promotion of the comfort of man. Discussions will include communicable disease control, milk and food sanitation, air pollution, refuse disposal, industrial hygiene and radiological health hazards. 3 hr. rec.

260. Statically Indeterminate Structures. I. 3 hr. PR: C.E. 160. An introduction to the fundamental theory of statically indeterminate structures with application to the evaluation of deflection of trusses and girders. Angle changes, moment area, and moment distribution methods. 3 hr. rec.

261. Statically Indeterminate Structures. I, II. 3 hr. PR: C.E. 260. General theory of continuity, prismatic and nonprismatic members; energy methods applied to trusses and beams; shear center, column analogy, rigid frames for bridges and buildings. 3 hr. rec.

271. Structural Design. II. 3 hr. PR: C.E. 160, 170. Design of steel structures. Welded, riveted, and bolted connections; simple and moment-resistant connections; cost estimates. Primarily bridge structures. 2 hr. rec., 3 hr. lab.

272. Plastic Design of Steel Structures. I, II. 3 hr. PR: C.E. 260 or consent. The fundamental concepts of the plasticity of steel. Analysis of structures for ultimate load. The influence of axial forces, shear forces, and local buckling on the plastic moment. Study of structural connections and deflections. Steel structure design. 3 hr. rec.

275. Reinforced Concrete. II. 3 hr. PR: C.E. 160, 170. Theory and design of slabs, beams, columns, footings, retaining walls, and concrete buildings. Introduction to principles of pre-stressed concrete. 2 hr. rec., 3 hr. lab.

280. Soils Engineering. II. 3 hr. PR: C.E. 115, T.A.M. 101. Origins and distribution of soils, classification of soils, fundamental soil properties, and stresses in soils. Subsurface exploration. Introduction to foundations design and the design and construction of earth structures. 2 hr. rec., 3 hr. lab.

281. Foundations Engineering. I, II. 3 hr. PR: C.E. 131, 280. Soils exploration and the design and analysis of engineering foundations. Particular emphasis on earth pressures and the design of retaining walls, studies of bracing systems and the elements of shallow and deep foundations for bridges and buildings. Movement of water through soil structures and control of water in excavations. 3 hr. rec.

290. Civil Problems. II. 1-4 hr. For junior, senior, and graduate students.

Graduate Division

315. Advanced Fluid Mechanics. II. 3 hr. PR: C.E. 115. Compressible and noncompressible flow, flow with friction and heat transfer, boundary layer flow, fluid machines, unsteady flow and fluid vibrations.

321. Hydraulic Structures. I, II. 3 hr. PR: C.E. 221 or consent. The hydraulic analysis and design of engineering structures such as reservoirs, dams, spillways, gates, and outlet works. The study of hydraulic machinery, irrigation, hydroelectric power, drainage and flood control. 3 hr. rec.

330. Bituminous Materials and Mixtures. I, II. 3 hr. PR: C.E. 131, 179. Manufacture and testing of bituminous materials. Significance of tests and specifications of bituminous materials. Principles of the design of bituminous mixtures, including methods of test and the influence of aggregate, temperature, and

other variables upon design for stability and durability. Production of bituminous mixtures and construction practice in utilizing these mixtures. 2 hr. rec., 3 hr. lab.

331. Pavement Design. I, II. 3 hr. PR: C.E. 131, 280. Effects of traffic, soil, and loads on the design of pavement. Consideration of drainage and climate. Design of bases and sub-bases. Methods of design of flexible and rigid pavements. Performance of pavement surveys. 2 hr. rec., 3 hr. lab.

232. Highway Economics and Planning. I, II. 3 hr. PR: Consent. Studies of the considerations involved in the planning of a well-integrated highway system. Highway administration and financial structure. Methods of establishing economic value of highway improvement. Classification of systems and rating of the performance of roads. Estimation of future traffic and highway needs. 3 hr. rec.

333. Geometric Design of Highways. I, II. 3 hr. PR: Consent. The theory and practice of the geometric design of modern highways. Horizontal and vertical alignment, cross-slope, design speed, sight distances, interchanges, and intersections are discussed. Critical analysis of design specifications. 2 hr. rec., 3 hr. lab.

350. Sanitary Chemistry and Biology. I, II. 3 hr. PR: C.E. 145, Bact. 248, or consent. Study of the physical and chemical properties of water. Theory and methods of chemical analysis of water, sewage, and industrial wastes. Biological aspects of stream pollution problems. 2 hr. rec., 3 hr. lab.

352. Water Treatment Theory. I, II. 3 hr. PR: C.E. 350. Theory of the various procedures and techniques utilized in the treatment of water for municipal and industrial use. Review of water quality criteria. 2 hr. rec., 3 hr. lab.

353. Sewage and Industrial Waste Treatment. I, II. 3 hr. PR: C.E. 350. Theory and methods of sewage treatment. Chemical, biochemical, and physical factors related to waste treatment. Characteristics of industrial wastes and special considerations necessary for their disposal. 2 hr. rec., 3 hr. lab.

356. Sewerage and Sewage Disposal. I, II. 2-6 hr. PR: C.E. 145. Special problems involved in the structural or hydraulic design of sewers or in the treatment of and disposal of sewage or industrial wastes.

357. Hydraulics of Sanitary Engineering Works. I, II. 3 hr. PR: C.E. 221. The application of the techniques of population growth estimation, rainfall and runoff analysis, flood flow, and ground water data to the design of sanitary works. Design of water distribution systems and sewerage systems. 2 hr. rec., 3 hr. lab.

358. Design of Sanitary Works. I, II. 3 hr. PR: C.E. 221. The investigation of water supply and waste water disposal problems. The design of water purification and waste water treatment facilities. 2 hr. rec., 3 hr. lab.

360. Statically Indeterminate Structures. I. 3 hr. PR: C.E. 260 or consent. General theory of continuity; moment distribution, fixed arches, the column analogy, general flexure, flexure formula for unsymmetrical bending and miscellaneous structures. 3 hr. rec.

361. Bridge Engineering. II. 3 hr. PR: C.E. 360. Statically indeterminate trusses; continuous trusses; steel and concrete arches; long-span and suspension bridges; secondary stresses. 3 hr. rec.

362. Numerical Methods of Structural Analysis. I, II. 3 hr. PR: C.E. 261 or 360. Methods of successive approximations and numerical procedures for the solution of structural problems. Application of these procedures to the analysis of bridges and buildings. 3 hr. rec.

363. Introduction to Structural Dynamics. I, II. 3 hr. PR: Math. 240, C.E. 261 or 360. General theory for dynamic response of systems having one or several degrees of freedom. Emphasis on the application of dynamic response theory to structural design. 3 hr. rec.

375. Reinforced Concrete Design. I. 3 hr. PR: C.E. 275. Theories of action of beams, slabs, and columns of reinforced concrete; review of standard codes and specifications and their influence on design. 3 hr. rec.

376. Behavior of Reinforced Concrete Members. I. 3 hr. PR or conc: C.E. 275, or consent. Studies of the actual behavior and strength of reinforced concrete members by critically reviewing experimental and analytical investigations. Beams subjected to pure flexure, columns subjected to axial compression; combined flexure and compression; combined flexure, shear, and bond. 3 hr. rec.

377. Behavior of Reinforced Concrete Structures. II. 3 hr. PR: C.E. 376. Continuation of C.E. 376. Studies of behavior and strength of statically indeterminate reinforced concrete structures. Comparison with reinforced concrete codes and specifications.

380. Soil Mechanics. I, II. 2-6 hr. PR: Consent. Advanced study of soil structure, shear strength, consolidation, and earth pressures. Sand drains, stress distribution, slope stability, seepage.

381. Soil Testing. I, II. 3 hr. PR: C.E. 280. The testing of soils for engineering purposes including classification, strength, consolidation, compaction, permeability, and special tests. Critical review of test methods and the analysis of test results. Organization and operation of a soils testing laboratory. 1 hr rec., 6 hr. lab.

382. Foundations and Earthwork Design. I, II. 3 hr. PR: C.E. 380. Planning and performance of subsurface exploration. Principles of the design and analysis of retaining walls, pile foundations, bulkheads, and shallow and deep foundations. Considerations in the design of embankments and slopes. Problems of soft ground and rock construction. 3 hr. rec.

390. Advanced Design Problems. I, II. 2-6 hr. A design or investigation of any assigned problem related to civil engineering.

395. Seminar. I, II. 1-2 hr. PR: Consent. Studies and group discussions of structural, fluid mechanics, surveying, transportation, and sanitary problems.

397. Research. I, II. 2-6 hr. Original report or investigation on some topic in the civil engineering field.

ELECTRICAL ENGINEERING

Professors Jones, Kreer, and M. J. Smith; Associate Professors Dubbe, Peterson, and Theophilus; Assistant Professors Barbe, Martin, and N. S. Smith, Jr.; Instructor Kline.

Undergraduate Division

E.E.

*10. Introductory Electrical Engineering. I, II, S. 2 hr. PR: Math. 5. An elementary course to introduce the fundamental laws and principles of electrical circuits. Introduction to electrical laboratory equipment and procedure. 1 hr. rec., 3 hr. lab.

*104. Illumination. I, II. 3 hr. PR: Physics 112 and Math. 108. A study of the basic principles and practices of illumination engineering, including a lighting survey and the design of a typical lighting installation. 2 hr. rec., 3 hr. lab.

*105. Electrical Fundamentals. I, II. 4 hr. PR: Math. 108 and Physics 112. Fundamental principles of electric and magnetic circuits. Induced and generated electromotive force. Fundamental A.C. circuit analysis. Polyphase systems. Elementary electronics. 3 hr. rec., 3 hr. lab.

*120. Electric and Magnetic Circuits. I, II, S. 3 hr. PR: E.E. 10, or conc: Math. 108, Physics 112. Underlying principles of electric, magnetic, and dielectric circuits including applications of Ohm's and Kirchhoff's laws. Induced and generated electromotive force. 3 hr. rec.

*121. Electrical Measurements Laboratory. I, II, S. 2 hr. To accompany E.E. 120. Principles of electrical instrumentation. 1 hr. rec., 3 hr. lab.

*125. A.C. Circuits. I, II. 4 hr. PR: E.E. 120 and Math. 108. The study of sinusoidal wave forms, introduction and use of complex algebra as applied to a.c.-circuit analysis, analysis of linear bilateral networks, coupled circuit behavior, and polyphase systems. 3 hr. rec., 3 hr. lab.

*126. Electric and Magnetic Fields. I, II. 3 hr. PR: E.E. 120 and Math. 108. Introduction to field theory. 3 hr. rec.

132. Electromechanical Devices. I, II. 4 hr. PR: E.E. 125, 126. Fundamentals of electromechanical energy conversion. Transformers and rotating machines. 3 hr. rec., 3 hr. lab.

*150. Electronics. I, II. 3 hr. PR: E.E. 125, 126. The study of electron ballistics, tube characteristics, rectifiers and voltage amplifiers. 2 hr. rec., 3 hr. lab.

180. Electrical Problems. I, II. 1-3 hr. For sophomore and junior students.

205. Electrical Fundamentals. I, II. 4 hr. PR: E.E. 105. Fundamentals and operating characteristics of electrical machines and transformers. Electron tube, phototube, and transistor characteristics. Electronic circuits. (Not open to electrical engineering students.) 3 hr. rec., 3 hr. lab.

233. Electromechanical Devices. I, II. 4 hr. PR: E.E. 132. Analysis of machine-performance by the principles of electromechanical energy conversion. 3 hr. rec., 3 hr. lab.

235. Electrical Machinery. I. 3 hr. PR: E.E. 233 or consent. Synchronous machines, windings, calculation of emf and mmf; mmf space functions. Potier diagram, ASA regulation, 2-reactance diagrams. Multiple-winding transformers and auto transformers. 2 hr. rec., 3 hr. lab.

236. Electrical Machinery. II. 3 hr. PR: E.E. 233 or consent. Commutation theory of machines, d.c. and a.c. multiple-winding and special purpose machines; multiple machine systems. 2 hr. rec., 3 hr. lab.

244. Electrical Calculations and Design. I. 3 hr. PR: E.E. 233. Problems pertaining to the design of electrical equipment. 1 hr. rec., 6 hr. lab.

245. Electric Control. I, II. 3 hr. PR: E.E. 233. A study of control equipment and its application. Stress is placed on the ability to understand control circuits. 1 hr. rec., 6 hr. lab.

*252. Electronics. I, II. 3 hr. PR: E.E. 150. The study of power amplifiers, tuned amplifiers, oscillators and modulators. 3 hr. rec.

*257. Transistor Circuits. I, II. 3 hr. PR: E.E. 252 or consent. A study of the general operating properties of the transistor as a circuit element . 3 hr. rec.

260. Transmission Lines. I, II. 3 hr. PR: E.E. 125, 126 and Math. 253. An introduction to transmission line theory and practice at power, audio, and radio frequencies. 3 hr. rec.

261. Networks and Filters. I, II. 3 hr. PR: E.E. 260 or consent. Analysis and synthesis of network and filters. 3 hr. rec.

262. Electronic and Communications Laboratory. I, II. 2 hr. To accompany E.E. 252 and E.E. 260. 6 hr. lab.

*264. Radio Engineering. I, II. 3 hr. PR: E.E. 252 or consent. Study and analysis of radio transmission, receiving and sound systems, frequency modulation, television, radiation and propagation. 3 hr. rec.

265. Radio Laboratory. I, II. 3 hr. To accompany E.E. 264. 6 hr. lab.

280. Electrical Problems. I, II. 1-3 hr. For junior, senior, and graduate students.

281. Electrical Power Systems. I. 3 hr. PR: E.E. 260 or consent. Polyphase transformation with three-phase and with single-phase transformers. Principles of circuit protection and relaying. Principles of grounding. Introduction to symmetrical components. 2 hr. rec., 3 hr. lab.

282. Symmetrical Components. II. 3 hr. PR: E.E. 260 or consent. An application of the methods of symmetrical phase components in calculating currents in systems under various types of unbalanced conditions. 3 hr. rec.

284. Transients. I, II. 3 hr. PR: E.E. 125 and Math. 253. A study of the transient behavior of various electrical circuits and networks. An introduction to the Laplace Transform methods, Heaviside's Expansion Theorem, and the Superposition principle. 3 hr. rec.

285. Electric-Power Transmission and Distribution. I, II. 3 hr. PR: E.E. 260. A study of circle diagrams applied to the various problems of power transmission; phase modifier applications and an introduction to power system stability. 3 hr. rec.

286. Fundamentals of Servomechanisms. I, II. 3 hr. PR: E.E. 284. Fundamental analysis of the servomechanisms and automatic control devices. 3 hr. rec.

287. Industrial Electronics and Controls. I, II. 3 hr. PR: E.E. 150 or consent. A study of electronics and magnetic control equipment and its application in industry. 3 hr. rec.

288. Antennas. II. 3 hr. PR: E.E. 264 or consent. Analysis and design of antenna systems. 3 hr. rec.

293. Electronic Computers. II. 3 hr. PR: E.E. 284. A study of the theory and operation of electronic computers. Amplitude scaling and time scaling on the analogue computer and application of the analogue computer to the solution of differential equations. 3 hr. rec.

299. Ultra-High Frequency Technology. II. 3 hr. PR: E.E. 264 or consent. Study of special problems encountered at high and ultra-high frequencies with special emphasis on pulse techniques as used in radar, television, and pulse-modulation. 3 hr. rec.

Graduate Division

300. Seminar. I, II, S. 1-3 hr. PR: Consent.

301. Electrical Power Systems. I. 3 hr. PR: E.E. 281 or consent. Load flow problems. Transient and steady state stability of systems. The principles of the application of network analyzers and other computing devices to the solution of power system problems. 3 hr. rec.

325. Advanced Linear Circuit Analysis. I. 3 hr. PR: Consent. Systematic formulation of circuit equations using topological methods. Application of matrix algebra and complex variables theory to circuit analysis. 3 hr. rec.

326. Advanced Electric and Magnetic Field Theory. I. 3 hr. PR: Consent. Maxwell's Equations. Electromagnetic waves, Poynting Vectors, Guided Waves. 3 hr. rec.

330. Electrical Machinery. II. 3 hr. PR: E.E. 235 or consent. Advanced theory of synchronous and induction machinery following Parks-Doherty-Nickel theory; applications of matrix algebra and tensor analysis. 3 hr. rec.

348. Nonlinear Problems in Electrical Engineering. I. 3 hr. PR: Consent. A study of the solution of nonlinear differential equations encountered in electrical engineering and automatic control. 3 hr. rec.

350. Electronic Circuits. I, II. 3 hr. PR: E.E. 252. An advanced study for the analysis and design of electronic circuits. 3 hr. rec.

351. Physical Electronics. II. 3 hr. PR: E.E. 252. Application of principles of physics to predict the external characteristics of electronic devices. 3 hr. rec.

361. Modern Network Synthesis. II. 3 hr. PR: E.E. 325 A study of the basic methods of modern network synthesis with applications to communications and automatic control systems. 3 hr. rec.

365. Noise Theory. I. 3 hr. PR: Consent. A study of methods of solving noise problems in communications and automatic control. 3 hr. rec.

386. Servomechanisms. II. 3 hr. PR: E.E. 286 or consent. An advanced study of the analysis and synthesis of servo-control circuits. 3 hr. rec.

387. Sampled-Data Control Systems. II. 3 hr. PR: E.E. 386 or consent. A study of control systems in which the activating signal is represented by samples at regular time intervals. 3 hr. rec.

397. Research. I, II. 1-6 hr. Advanced research or special investigations on some topic related to electrical engineering.

GENERAL

Professors C. H. Cather and Worrell; Associate Professor Weaver; Instructor Long.

G.

1. Engineering Lectures. I. (credit). Required of all freshmen in engineering. A series of lectures designed to acquaint the engineering student at the beginning of his course with the profession he has chosen. 1 hr. lec.

100. Inspection Trip. II. (credit). Required of all seniors in engineering.

190. Law for Engineers. I, II. 3 hr. PR: T.A.M. 102. Contracts, agency, business organization, sales, negotiable instruments, real and personal property, professional registration, and patents. 3 hr. rec.

INDUSTRIAL ENGINEERING

Professor R. E. Shafer; Associate Professors Armstrong and Fowler; Assistant Professor Cook; Instructors Black, Delaney, Donnally, and Martin.

Undergraduate Division

I.E.

*7. Welding and Heat Treatment. I, II, S. 1 hr. Practice in cutting and welding steel and cast iron with oxyacetylene and arc welding equipment. Demonstrations of different methods of heat treatment. One 3 hr. lab.

*11. Machine Work. I, II, S. 2 hr. A study of equipment, purpose and character of operations, methods of holding work, turning, boring, drilling, grinding, and shaping. Use of precision measuring instruments. Two 3 hr. lab.

*15. Welding, Forming, and Heat Treatment. I, II, S. 2 hr. Molding and casting of nonferrous metals, oxyacetylene welding, electric welding, resistance welding of plates, pipes, tubing, etc. Lectures, recitations, demonstrations, and laboratory practice. 6 hr. lab.

31. Principles of Industrial Engineering. I, II. 2 hr. Principles of organization, including study and design of organization charts; elementary principles of motion and time study which includes elemental breakdown of jobs, use of time-study watches and analysis of principles of motion economy; application of equipment to present-day industrial processes. 2 hr. rec.

40. Industrial Mechanisms. I, II. 1 hr. PR: M.E. 20. Study of fundamental mechanisms applied to production machinery, i.e., clamping devices, timing devices, timing linkages, transfer mechanisms, etc. Design of mechanisms to give specified motions and replacement of one type of mechanism by another. One 3 hr. lab.

*100. Manufacturing Processes. I, II, S. 3 hr. Lectures, demonstrations, and laboratory work relating to methods, types of equipment and character of operations of welding machines and machine tools. Emphasis is placed on the economic use of machine tools, assembly line manufacture, gauging, and inspection. 2 hr. rec., 3 hr. lab.

110. Tool Design. I, II. 3 hr. PR: I.E. 40, 100. Design, construction, application, and economic aspects of jigs, fixtures, and special tools used in manufacturing on a production basis. 2 hr. rec., 3 hr. lab.

131. Fundamentals of Industrial Engineering. I, II. 2 hr. PR: Sophomore standing. Principles of organization, including study and design of organization charts. Integration of motion and time study, production control, accounting, job evaluation, engineering economy, and other functions of industrial engineering into a composite industrial picture. Review of existing labor laws and current legislation. 2 hr. rec.

*140. Motion and Time Study. I, II, S. 3 hr. PR: Junior standing. Principles and techniques, job analysis, standardization, and formula construction; stop watch and micromotion analysis of industrial operations; development of production and incentive standards. 2 hr. rec., 3 hr. lab.

142. Production Control. I, II, S. 2 hr. PR or conc: I.E. 140. Planning, scheduling, routing, and dispatching in manufacturing operations and production control systems. 2 hr. rec.

*151. Accounting for Engineers. I, II, S. 4 hr. PR: Junior standing. A study of the accounting cycle, journals, and ledgers; study of fixed assets and depreciation; interpretation of financial statements. A survey of the essentials of cost accounting. Emphasis is placed on the utilization of cost data and reports by management, indicating management's control over industrial operations. 3 hr. rec., 3 hr. lab.

160. Work Measurement and Methods Engineering. I, II. 4 hr. PR: Junior standing. Fundamentals of motion and time study, job analysis and standard practice. Advanced work measurement techniques of micromotion analysis, work sampling, standard data and formula construction, and pre-determined time standards. Development of allowances, production, and incentive standards. Methods engineering; operation analysis, process chart usage in man, machine, and materials handling analysis. Operator analysis of workplace layout, motion economy design, and synthetic methods development by use of fundamental motions. 3 hr. rec., 3 hr. lab.

*180. Introduction to Digital Computation. I, II, S. 3 hr. PR: Math. 2 or 3. Introduction to stored-program concepts, flow diagrams, looping, decisions, input-output techniques, interpretive systems, algebraic compilers, symbolic assembly systems, machine languages, subroutines, equipment components, and their

applications. The student will have considerable opportunity to actually process numerical problems. The field of present and future equipment components will be surveyed, and the advantages and disadvantages of various techniques and systems will be indicated. 2 hr. rec., 3 hr. lab.

*200. Metal-Cutting Theory and Practice. I, II. 3 hr. PR: I.E. 100, Ch.E. 250. Metal-cutting tools, tool materials, work materials, cutting fluids, process of chip formation, cutting forces, tool-life tests, economics of tool life, measurement of product. 2 hr. rec., 3 hr. lab.

211. Industrial Engineering Problems. I, II. 1-3 hr. PR: I.E. 140, Senior standing. Special problems relating to industrial engineering.

*214. Advanced Analysis of Engineering Data. I, II, S. 3 hr. PR: I.E. 244. The application of advanced theories of statistical techniques to analyze and interpret industrial problems. Subjects include multiple regression, curvilinear regression, advanced analysis of variance, randomized complete blocks, Latin Square designs, factorial designs, transformations; and analysis of response curves. Accent is on proper design of experiments, proper interpretation of results, and thorough consideration of all errors of estimation and errors of inference. 3 hr. rec.

*215. Statistical Decision Making. I, II, S. 3 hr. PR: I.E. 244 or consent. Probability relating to decision processes and essential logic in the applications of statistics and how management can recognize situations in which it will be profitable to employ them. 3 hr. rec.

*240. Motion and Time Study. I, II, S. 3 hr. PR: Junior standing. Not for industrial engineering students. Principal aims and applications of time and motion study. Job analysis, standardizations, use of stop watch micromotion analysis, operation and methods analysis. 2 hr. rec., 3 hr. lab.

*244. Engineering Statistics. I, II, S. 3 hr. PR or conc: Math. 108. The use of graphical analysis; measures of central tendency and dispersion; normal, binomial, and Poisson distributions in engineering applications; linear regression and correlation; tests of significance, nonparametric statistics, and analysis of variance. 3 hr. rec.

*250. Electronic Computer Data Processing. II. 3 hr. PR: Senior standing. Fundamentals of digital computer operations, equipment characteristics, input and output components. Elements of number systems. Fundamentals of "IR," information retrival. Emphasis is placed on integrated systems analysis and design, business and industrial data for computer applications, and fundamentals of programming. Existing equipment systems and the economics of their applications will be reviewed.

*254. Introduction to Operations Research. I, II. 3 hr. PR: I.E. 142, 244, or consent. Economic problems of production management; schematic models; linear programming; total value analysis; incremental analysis; Monte Carlo analysis: and equipment investment analysis. 3 hr. rec.

286. Engineering Economy. I, II, S. 2 hr. PR: Junior standing. Comparison of the relative economy of engineering alternatives; compound interest in relation to calculation of annual costs; present worth and prospective rates of return on investment; increment costs, sunk costs, and the economy of equipment replacement. 2 hr. rec.

*287. Engineering Economy. I, II. 3 hr. PR: Junior standing. Comparison of the relative economy of engineering alternatives; compound interest in relation to calculation of annual costs; present worth and prospective rates of return on investments; methods of depreciation; sunk costs, increment costs; general economy studies with emphasis on retirement and replacement of equipment; consideration of taxes, public works, and manufacturing costs as related to economic solution of engineering proposals. 3 hr. rec.

*288. Job Evaluation and Wage Incentives. I, II, S. 2 hr. PR: I.E. 140 or consent. Principles used in evaluating jobs, rates of pay, characteristics and objectives of wage incentive plans; incentive formulae and curves. 2 hr. rec.

*290. Industrial Statistics. I, II, S. 2 hr. PR: I.E. 244. Economic objectives of quality control in manufacturing through sampling methods; the Shewhart control chart for variables, attributes, and defects per unit; statistical approach to acceptance procedures. 2 hr. rec.

292. Plant Layout and Design. I, II, S. 3 hr. PR: I.E. 110 and 142. Problems in industrial plant design. Equipment location, space utilization, layout for operation and control, flow sheets, materials handling. Allied topics in power utilization, light, heat, and ventilation. 1 hr. rec., 6 hr. lab.

*294. Standard Manufacturing Costs. I, II, S. 3 hr. PR: I.E. 151. Development of standards for labor, material, and overhead expenses; uses of standards for control; analyses of variances between standard and actual costs. 3 hr. rec.

Graduate Division

300. Advanced Metal Cutting Theory and Practice. I, II. 3 hr. PR: I.E. 200. The development of metal cutting as a science through research, cutting-fluid theory, machinability of materials, tool materials, hot machining, tool life tests, economics of machining. 2 hr. rec., 3 hr. lab.

311. Seminar. I, II, S. 1-3 hr. PR: Consent. Discussion of research in Industrial Engineering and special problems.

315. Management Control. I, II, S. 3 hr. PR: I.E. 151 or consent. A study of effective techniques for higher management control; a study of integrated and related control data to aid in establishing a preconceived goal. 3 hr. rec.

344. Advanced Design of Industrial Experiments. I, II, S. 3 hr. PR: I.E. 214. A study of several of the more complex statistical methods including sequential analysis, analysis of covariance, multiple range tests, transformation of data, large factorial experiments, confounding, fractional replication, split-plot designs, lattice designs with one and two restrictions on treatment allocation, with special emphasis on the power, relative efficiency, and interpretation of these designs.

350. Queueing Theory. I, II. 3 hr. PR: I.E. 244. Best operating conditions for systems involving waiting times. Elements of stochastic processes. Single-channel and multichannel models. Computational methods, including Monte Carlo techniques. Applications to problems such as maintenance and inventory control. 3 hr. rec.

361. Methods Analysis and Work Simplification. I, II. 3 hr. PR: I.E. 140, 286. An advanced study of the techniques of methods analysis, including modern means of methods research. Development of appropriate cost analyses to accompany improved operating plans. A study of the design, installation, and administration of work simplification programs, suggestion systems, and remuneration policies, and the means of intra-plant communications concerning such programs. 2 hr. rec., 3 hr. lab.

370. Theory of Industrial Engineering and Organization. I, II, S. 3 hr. PR: Graduate standing and consent. History and development of scientific management in industry with early works of Taylor, Galbreth, and Gantt, to the present time. 3 hr. rec.

371. Methods Analysis. I, II. 2 hr. PR: I.E. 140 or I.E. 240. An advanced study of the technique of methods analysis as an effective means of methods improvement and cost reduction. 2 hr. rec.

372. Advanced Time Study. I, II, S. 3 hr. PR: I.E. 140. Review of the various investigations which have been made, with special consideration given to the development of these studies into new fields. 3 hr. rec.

373. Budget Control. I, II. 3 hr. PR: I.E. 294. Principles involved in the preparation of budgets by functional divisions and the application of divisional budgets as control media. 3 hr. rec.

374. Advanced Engineering Economy. I, II. 3 hr. PR: I.E. 287. Special emphasis on depreciation, engineering and economic aspects of selection and replacement of equipment; relationship of technical economy to income taxation and load factor and capacity to economy. 3 hr. rec.

380. Integrated Data Processing. I, II. 3 hr. PR: I.E. 250 and consent. Advanced work in electronic data-processing systems and procedures design. Case studies of integrated data-processing systems. Course projects will include individual use of a computer in management data-processing analysis problems. 3 hr. rec.

390. Advanced Industrial Statistics. I, II. 3 hr. PR: I.E. 290. Advanced study of 10 per cent-, single-, double-, and sequential-sampling procedures, problems of application of statistical quality control methods in industries. 3 hr. rec.

397. Research. I, II. 1-6 hr. Investigation or original research on some special topic relating to industrial engineering.

MECHANICAL ENGINEERING

Professors J. T. Anderson and H. M. Cather; Associate Professors Hamilton and Slonneger; Assistant Professors Gencsoy, Parmer, and Warner; Instructors Keagy, Long, O'Leary, Dixon,† Sherren,† and W. D. Teter.†

Undergraduate Division

M.E.

*20. Engineering Drawing. I, II, S. 3 hr. PR: Plane geometry. Lettering, use and care of instruments, orthographic projection, isometric drawing, auxiliary views, detail drawings and working drawings, assembly drawing, reproduction of drawings and piping layouts. 1 hr. rec., 6 hr. lab.

*26. Descriptive Geometry. I, II, S. 2 hr. PR: M.E. 20, Math. 4, and solid geometry. The application of projective drawing to the solution of advanced space problems dealing with points, lines, planes, and solids by the use of auxiliary views. 6 hr. lab.

109. Mechanism. I, II. 2 hr. PR: M.E. 26. Analytical and graphical study of relative displacements of fundamental mechanisms, i.e., linkages, cams, gears, gear trains, pulleys, sheaves, etc. Design of mechanisms to give required displacement curves and study of replacement of one type of mechanism by another. 6 hr. lab.

112. Kinematics and Dynamics of Machines. II. 3 hr. PR: M.E. 109 and T.A.M. 104. Analytical and graphical solution of velocities, accelerations and force systems encountered in machines. Balancing of reciprocating and rotating masses; vibration and critical speed of shafts; turning effort diagrams and their analysis for flywheel requirements; theory of governors, and gyroscopic forces. 2 hr. rec., 3 hr. lab.

120. Engineering Thermodynamics. I. 3 hr. PR: Physics 111 and Math. 108. First and second laws of thermodynamics; energy equations; properties of gases and vapors; gaseous mixtures and combustion. 3 hr. rec.

†Part-time.

121. Thermodynamics of Engineering. I, II, S. 3 hr. PR: Physics 111, Math. 108. Principles of thermodynamics; properties of gases and vapors; vapor cycles; internal combustion engines cycles; refrigeration; and heat transfer. Not open to students majoring in mechanical engineering. 3 hr. rec.

122. Mechanical Laboratory. I, II. 1 hr. PR: M.E. 121. Experiments involving calibration of measuring instruments, calorific value of fuels, physical properties of lubricating oil and elementary tests of engines and boilers. 3 hr. lab.

125. Engineering Thermodynamics. II. 3 hr. PR: M.E. 120 or consent. Continuation of M.E. 120; gas cycles; vapor cycles; air-vapor mixtures; flow; thermodynamics relations and equilibrium. 3 hr. rec.

132. Mechanical Laboratory. II. 1 hr. PR: M.E. 120. Experiments involving calibration of measuring instruments; fuels; power measurements; and performance tests of equipment. 3 hr. lab.

133. Engineering Laboratory. I. 2 hr. PR: M.E. 132. Continuation of M.E. 132. Experiments involving heat transmission, refrigeration, and internal combustion engines. 3 hr. lab.

201. Design of Machine Members. I. 3 hr. PR: T.A.M. 103 and M.E. 112 or consent. Analysis and design of machine members based on the theory of strength of materials and its modifications due to manufacturing processes and economic considerations. Emphasis is on rational methods and the development of judgment in the design. 1 hr. rec., 6 hr. lab.

202. Engineering Analysis and Design. II. 3 hr. PR: M.E. 113 and consent. Use of fundamental principles of mathematics, statics, physics, mechanics, thermodynamics, and heat transfer in the rigorous analysis of engineering problems. Determination of the critical specifications of the problem solution and the use of a creative approach to the satisfaction of these critical specifications in a workable system. 2 hr. rec., 3 hr. lab.

203. Machine Design. II. 3 hr. PR: M.E. 113. Design of complete machines to perform given functions. Creative design is encouraged to provide new ideas. Final designs are selected to perform the function, be economical and easy to fabricate, and have a generally pleasing appearance. 1 hr. rec., 6 hr. lab.

204. Mechanical Vibrations. I. 3 hr. PR: Math. 253 and T.A.M. 104 or consent. Fundamentals of vibration theory. Free and forced vibration of one, two and multiple degree of freedom systems, transient analysis. Solution by Fourier and Laplace Transformation. Methods of Rayleigh, Holzer and Stodola. Conservative systems and LaGrange's equation. 2 hr. rec., 3 hr. lab.

205. Kinematics. II. 3 hr. PR: M.E. 112 and Math. 253, or consent. Geometry of constrained motion, kinematic synthesis and design, spacial linkages. Coupler curves, inflection circle Euler-Savary equation, cubic of stationary curvature and finite displacement techniques. 3 hr. rec.

223. Power Plants. I. 3 hr. PR: M.E. 125. Principles of design and operation of modern steam power plants for central stations and for process industries. Each student submits an individual design problem. 3 hr. rec.

224. Steam Turbines. I, II. 3 hr. PR: M.E. 125. The theory of fluid dynamics and the thermodynamics of the modern turbines; materials, construction details and design of important elements; influences on economy of variations in cycles and operative ranges. 3 hr. rec.

229. Internal Combustion Engines. I. 3 hr. PR: M.E. 121 or M.E. 125. The thermodynamics of the internal combustion engines; Otto cycle; Diesel cycle; two- and four-cycle engines, fuels, carburetion and fuel injection; combustion; engine performance, supercharging. 3 hr. rec.

230. Heat Transfer I. I, II. 3 hr. PR: M.E. 120 or M.E. 121. Steady state and transient conduction, including extended surface and numerical methods, emphasizing both forward and backward time step methods. Thermal radiation including radiation functions and radiation network theory. Boundary layer equations and forced and free convection are also covered. 3 hr. rec.

231. Introduction to Gas Dynamics. I, II. 3 hr. PR: M.E. 125 or M.E. 121, Math. 240 and Math. 253. The basic fundamentals of gas dynamics, one-dimensional gas dynamics and wave motion, methods of measurement, effect of viscosity and conductivity, and concepts from gas kinetics. 3 hr. rec.

235. Heat Transfer II. I, II. 3 hr. PR: M.E. 230. A continuation of M.E. 230, covering nonlinear extended surface; gas radiation; freezing; heat exchanger theory; recovery factor and high speed flow; and mass transfer. Also, periodic flow and application of the digital computer to problems in heat transfer. 3 hr. rec.

250. Heating, Ventilating, and Air Conditioning. II. 3 hr. PR: M.E. 125 or consent. Methods and systems of heating, ventilating, and air conditioning of various types of buildings, types of controls and their application. 3 hr. rec.

260. Introductory Engineering Systems Analysis. I, II. 3 hr. PR: Senior standing. A study of analogous and mixed systems. Similitude of mechanical, electrical, and acoustic dynamic systems. Dimensional analysis and theory of model design. 3 hr. rec.

265. Engineering Acoustics. I, II. 3 hr. PR: Math. 253 and consent. Use of fundamental principles of mathematics and physics to develop the basic theories of sound. Application of these theories involving sound in closed areas, the various modes of sound transmission, noise control, and psychoacoustic criteria. 3 hr. rec.

271. Fluid Power Control. I, II. 3 hr. PR: M.E. 125 or M.E. 121 and C.E. 115 or conc: C.E. 115. Use of fundamental properties of fluids and fluid flow in the operation of power control systems. The theory and design of hydraulic and air operated control components with special emphasis on automatic circuits. 3 hr. rec.

280. Mechanical Problems. I, II. 1-6 hr. For junior, senior, and graduate students.

Graduate Division

300. Seminar. I, II. 1-3 hr. PR: Consent. Discussion, library readings, and individual study reports in the mechanical engineering field.

303. Advanced Machine Design. I, II. 3 hr. PR: M.E. 203. Stresses in indeterminate machine parts, experimental stress analysis. Design for high temperatures, pressures and speeds. Bearings and lubrication. Rotating discs and elastic stability and high speeds. Residual stresses and creep. 3 hr. rec.

320. Advanced Thermodynamics. I, II. 3 hr. PR: M.E. 125. Definitions and scope of thermodynamics, First and Second laws, Maxwell's relation, Calpeyron relations, equation of state, thermodynamics of reactive systems, availability.

321. Advanced Thermodynamics II. I, II. 3 hr. PR: M.E. 320 or consent. Methods of statistical mechanics; concept of temperature; perfect diatomic gases and crystalline solids, Jacobean equations of thermodynamics; grand potential function; inherently irreversible processes.

330. Advanced Heat Transfer. I, II. 3 hr. PR: M.E. 230 or consent. Analytical and application treatment of steady state and transient conduction, including internal generation, integral equation forms, numerical solutions and minimum weight fin theory. Boundary layer theory of forced convection, Nusselt film theory of condensation and boiling theory.

331. Advanced Heat Transfer. I, II. 3 hr. PR: M.E. 330 or consent. Continuation of M.E. 330. Thermal radiation theory and application in addition to measurement errors and techniques. Topics covered will be radiation network theory, radiation functions and theory of emissivity. Some time is allowed for modern developments in heat transfer including the solution of heat transfer problems on digital computers.

351. Advanced Internal Combustion Engines. I, II. 3 hr. PR: M.E. 229 or consent. Combustion in spark ignition engines; compression ignition engines; detonation; fuel-air ratios; heat losses; lubrication; efficiencies; two-stroke engines; four-stroke engines; performance, exhaust turbines; gas turbines. 3 hr. rec.

352. Turbomachinery. I, II. 3 hr. PR: M.E. 121 or M.E. 125. A study of flow problems encountered in the design of water, gas and steam turbines, centrifugal and axial flow pumps and compressors, design parameters.

354. Advanced Refrigeration. I, II. 3 hr. PR: M.E. 250. Thermodynamics of vapor cycles, refrigerants, fluid flow, heat transfer, psychrometrics, types of refrigeration and equipment required, application of refrigeration in industry, food preservation. 3 hr. rec.

360. Engineering Similitudes. I, II. 3 hr. PR: Consent. Development of the dimensional analysis concepts and techniques and their application in model design. Rational approach to the design of distorted models. Study of analogies from a standpoint of model-prototype relations. 3 hr. rec.

397. Research. I, II. 1-6 hr. Investigation or original research on some topic relating to mechanical engineering.

THEORETICAL AND APPLIED MECHANICS

Professors Byars, C. H. Cather, and Worrell; Associate Professors Shreeves, and Weaver; Assistant Professor Plants; Instructors Snyder, Teter, White, Bellia,† and Frisch.†

Undergraduate Division

T.A.M.

101. Statics. I, II, S. 3 hr. PR: Math. 108, Physics 111 (or reg. in Math. 108.) Fundamental definitions and the concept of static equilibrium; systems of forces and couples; application to solution of trusses and frames; centroids and moments of inertia. 3 hr. rec.

102. Mechanics of Materials. I, II, S. 3 hr. PR: T.A.M. 101 and Math. 108. Stress, strain, stress-strain relationships; Mohr stress and strain-circles; load-stress and load-deformation relationships for axial, torsion, bending, and buckling loads; inelastic as well as elastic theory is considered; deflections; column theory. 3 hr. rec.

103. Mechanics of Materials. I, II, S. 3 hr. PR: T.A.M. 102 and Math. 108. Theories of failure and design procedures; survey of experimental stress analysis; fatigue, energy, creep, relaxation, and temperature considerations. Laboratory work in behavior of common engineering materials under load; evaluation and interpretation of mechanical properties. 2 hr. rec., 3 hr. lab.

104. Dynamics. I, II, S. 3 hr. PR: T.A.M. 101 and Math. 108. Kinematics of a particle; moment of inertia of masses; translation, rotation and plane motion of rigid bodies; principle of work and energy impulse and momentum; application to engineering problems. 3 hr. rec.

†Part-time.

200. Advanced Mechanics of Materials. I, II. 3 hr. PR: T.A.M. 103. Combined stress and theories of failure; shear center; unsymmetrical bending; curved flexural members; thick-walled cylinders; localized stress; strain-energy methods of analysis. 3 hr. rec.

201. Theory and Application of Oscillatory Phenomena. I, II. 3 hr. PR: T.A.M. 101, 104. Dynamic balancing; Corioli's Law; gyroscopes; governors; simple servo-mechanism; mechanical vibration.

202. Advanced Materials Laboratory. I, II. 2-4 hr. PR: T.A.M. 103. Continuation of T.A.M. 103 with emphasis on a selected problem or problems.

203. Experimental Stress Analysis. I, II. 3 hr. PR: T.A.M. 103, 104. Introduction to some of the more common experimental methods of analyzing stress distributions. Photoelasticity, brittle lacquers, birefringent coatings, strain gage techniques and instrumentation, as applied to problems involving static, dynamic and residual stress distributions. 2 hr. rec., 3 hr. lab.

250. Intermediate Dynamics. I, II. 3 hr. PR: Math. 253, T.A.M. 104. Vector notation. Mechanics of a particle; curvilinear coordinates, geometry of space curves, moving reference frames, generalized coordinates. Dynamical principles; D'Alembert's principle, principle of virtual work, Lagrange's equations, variational formulation of Hamilton's principle. Two-body problem, discussion of restricted three-body problem. 3 hr. rec.

280. Special Problems in Mechanics. I, II, S. 1-3 hr. PR: T.A.M. 103 and consent. For junior, senior, and graduate students.

Graduate Division

302. Analytical Methods in Engineering. I, II. 3 hr. PR: Math. 240 or 253, T.A.M. 102, 104. A course designed to provide training in the applications of mathematical analysis to engineering problems. 3 hr. rec.

303. Analytical Methods in Engineering. I, II. 3 hr. PR: T.A.M. 302. Continuation of T.A.M. 302. 3 hr. rec.

310. Advanced Mechanics of Materials. I, II. 3 hr. PR: T.A.M. 200. Study of beams on continuous elastic support, flat plates, torsion in noncircular sections, contact stresses, plastic strain, instability and buckling.

312. Inelastic Behavior of Engineering Materials. I, II. 3 hr. PR: T.A.M. 200. Inelastic load-stress relationship for members subjected to axial, bending, torsion and buckling loads. Analytical stress-strain relationship and use of Ramberg-Osgood parameters. Combined loading, interaction curves and their use. Statically indeterminate members loaded inelastically; inelastic buckling theory.

314. Theory of Buckling. I, II. 3 hr. PR: Math. 253, T.A.M. 102. Fundamentals for the prediction of failure by instability of structural elements; elastic columns with various end restraints, frameworks, arches, rings, plates, shells; inelastic buckling of columns and plates; lateral instability of beams. 3 hr. rec.

316. Energy Methods in Applied Mechanics. I, II. 3 hr. PR: Math. 253, T.A.M. 102; T.A.M. 200 and 310 desirable. Introduction to variational principles of mechanics and applications to engineering problems; principle of virtual displacements, principle of minimum potential energy, principle of complementary energy, Castigliano's theorem, Hamilton's principle. Applications of energy principles to stress analysis of statically determinant and statically indeterminant frames, problems of elastic stability, rings, curved beams, elastic plates. 3 hr. rec.

320. Theory of Elasticity. I, II. 3 hr. PR: Math. 240 or 253, T.A.M. 200, 203. Equations of equilibrium and compatability; stress, strain and displacement

relationships; applications to beams, curved members, rotating discs, plates, and other structural and machine parts.

321. Theory of Elasticity. I, II. 3 hr. PR: T.A.M. 320. Continuation of T.A.M. 320. 3 hr. rec.

324. Theory of Thin Shells. I, II. 3 hr. PR: Math. 240 or 253 and 254 or equivalent, T.A.M. 320. Theoretical basis for stress analysis of shell-type structures such as concrete roofs and domes, pressure vessels, missiles, space craft, submarines, etc. Material includes differential geometry of surfaces, current shell theories; flat plates (considered as special class of shells). 3 hr. rec.

330. Instrumentation in Engineering. I, II. 3 hr. PR: T.A.M. 104 or equivalent. Study of the theory of measuring instruments, with emphasis on dynamic (as opposed to static or slowly changing) measurements of pressure, strain displacement and its derivatives, temperatures, etc. Also selections of instruments for specific purposes.

340. Photoelasticity. I, II. 3 hr. PR: T.A.M. 200, 203. Theory of optics, birefringence, stress-optic law, polariscope, compensation. Techniques of model making, photography, polariscope use. Data interpretation by various methods including principal stress separation by shear difference and graphical integration. 2 hr. rec. 3 hr. lab.

350. Advanced Dynamics. I, II. 3 hr. PR: T.A.M. 250. Continuation of T.A.M. 250. Mechanics of rigid bodies; theory of moments of inertia, angular momentum and kinetic energy, Poinsot's interpretation of torque-free motion, Euler's angles, Euler's dynamical equations, pitch, roll, yaw, spinning top, gyroscopes.

351. Advanced Dynamics. I, II. 3 hr. PR: Math. 254 or equivalent. Dynamics of continuous solids. Wave motion; study of string motion in detail in order to introduce methods for attacking more general problems, vibration of beams, membranes and plates. Stress propagation in unlimited solids, problems connected with half-spaces; spallation.

380. Advanced Independent Study. I, II, S. 1-3 hr. PR: T.A.M. 200, 203, Math. 253 or Math. 254. Individual investigation, either analytical or experimental, in one or more phases of advanced mechanics.

397. Research. I, II, S. 1-6 hr. Advanced research or special investigations on some topic related to mechanics.

Courses in the School of Mines

Professor Holland; Associate Professor Laird; Assistant Professors McClung, Sandy, and Wasson.

Undergraduate Division

E.M.

1. Freshman Orientation. 1. (Credit). Required of all freshmen in mining engineering, including the petroleum and geological engineering option. A series of lectures designed to acquaint the student at the beginning of his course with the characteristics and requirements of the engineering profession, with particular attention to the mineral engineering fields. 1 hr. lec. Staff

102. Mine Surveying. SI. 6 hr. PR: Math. 5, M.E. 26. Principles of surface and subsurface surveying, celestial observations, and related calculations together with intensive field practice in underground and surface surveying. Rec. and field work arranged. Mr. Laird

106. Mineralogy. II. 2 hr. PR: Chem. 163. Mineral identification, blowpipe analysis of minerals; occurrence, geographic distribution and utilization of minerals; elements of crystallography. Two 3 hr. labs. Mr. Laird

107. Mining Methods. I. 3 hr. PR: Phys. 112, Geol. 1. Inspection and evaluation of mining properties, mining methods and systems of mining, roof control, and operating characteristics of mining machinery. Inspection trips with written reports required. 3 hr. rec. Mr. McClung

111. Introductory Mining. I, II. 2 hr. PR: Phys. 112. A review of the past and present status of the mineral industries together with the tools and methods of mining exploitation including prospecting, drilling and blasting. 2 hr. rec. Mr. Sandy

201. Oil Field Development. I. 3 hr. PR: Phys. 112, Math. 4, Geol. 3. Introduction to principles, equipment, and methods applied to development of an oil property. 2 hr. rec. Mr. Wasson

203. Petroleum Property Valuation and Management. II. 2 hr. PR: E.M. 204. Petroleum property valuation and acquisition; economic, governmental and social aspects of management of oil and gas properties. 2 hr. rec. Mr. Wasson

204. Oil and Gas Production. II. 3 hr. PR: E.M. 201. Continuation of E.M. 201 and core analysis and oil testing laboratory. 3 hr. rec., 3 hr. lab. Mr. Wasson

205. Gas Measurement Engineering. II. 2 hr. PR: E.M. 201, C.E. 115. Methods of commercial gas measurement and pressure regulation with a laboratory devoted to use of various types of equipment. 1 hr. rec., 3 hr. lab. Mr. Laird

207. Introductory Seismology. I, II. 1 hr. PR: Phys. 112. Earthquakes and their causes and area distribution; theory of elastic waves; the principles of seismograph construction, adjustment, and operation; interpretation and calculation of seismograms with exercises provided by records of the University seismograph station. 1 hr. rec. Mr. Laird

208. Geological Surveying. II. 1 hr. PR: E.M. 102, Geol. 151. Topographic mapping with the plane table. 3 hr. field. Mr. Laird

209. Mineral Preparation. I, II. 2 hr. PR: E.M. 212, T.A.M. 104, or consent. Principles of preparation, beneficiation and concentration of metallic and nonmetallic ores for further processing or utilization. Not open to students with credit in E.M. 217. 2 hr. rec. Mr. Sandy

210. Mineral Preparation Laboratory. I, II. 1 hr. PR: E.M. 209 or concurrent registration in E.M. 209. Laboratory exercises and practice in sampling, screen analyses, float and sink separation, assembly and interpretation of test data, and the use of various types of beneficiation equipment. 3 hr. lab. Mr. Sandy

212. Advanced Mining. II. 3 hr. PR: E.M. 111, E.E. 105. Engineering principles, methods and equipment applied to mine transportation, hoisting, and drainage. 3 hr. rec. Mr. McClung

213. Mine Ventilation. I. 3 hr. PR: E.M. 107, T.A.M. 104. Principles, purposes, methods and equipment pertaining to the ventilation of mines. 2 hr. rec., 3 hr. lab. Mr. McClung

214. Mine Valuation, Cost Control and Economics. I, II. 3 hr. PR: Econ. 2, E.M. 107, or consent. Mineral property evaluation, sampling and estimation of mineral deposits, capitalized costs in mining and recovery of investment, analysis of mining costs, cost control and time analysis of mining operations. 3 hr. rec. Mr. Sandy

215. Industrial Safety Engineering. I, II. 2 hr. PR: Junior standing or consent. Analysis of problems of industrial safety and accident prevention, laws

pertaining to industrial safety and health, compensation plans and laws, and industrial property protection. 2 hr. rec. Mr. Sandy

216. Petroleum Engineering Design. I. 2 hr. PR: E.M. 204. Structural and machine analysis and design as related to the production and transportation of oil and natural gas. Two 3 hr. labs. Mr. Laird

217. Coal Preparation. I, II. 3 hr. PR: E.M. 212, T.A.M. 104; PR or conc: C.E. 115. Principles of preparation and beneficiation of coal for marketing, with laboratory devoted to sampling, screen analyses, float and sink separation, and use of various types of coal cleaning equipment. 2 hr. rec., one 3 hr. lab. Mr. Sandy

218. Advanced Mineral Preparation. I, II. 3 hr. PR: E.M. 106, E.M. 217. The theory and practice of concentration ores and industrial minerals with special consideration to the more recent advances in the beneficiation of both ores and coal. 2 hr. rec., 3 hr. lab. Mr. Sandy

219. Advanced Mining Methods for Vein Deposits. I, II. 3 hr. PR: E.M. 107, T.A.M. 104. Methods and systems of mining other than flat seams. Emphasis placed on selection of methods in relation to cohesive strength of ore bodies and their enclosing wall rocks. Mining of anthracite seam included. 3 hr. rec. Mr. Sandy

220. Mine Design. I, II. 2 hr. PR: E.M. 212 and registration in C.E. 122. Design of an underground mining development with full report. Two 3 hr. labs. Mr. McClung

221. Mine Design. I, II. 2 hr. PR: E.M. 217, 220. Continuation of E.M. 220 including design of preparation plant and loading facilities with full report covering plan, equipment, operation, and costs. Two 3 hr. labs. Mr. Sandy

222. Mine Equipment and Machinery. I, II. 3 hr. PR: E.E. 105, E.M. 212. Selection, installation, operation, and maintenance of mining equipment. 3 hr. rec. Mr. McClung

223. Mine Management. II. 3 hr. PR: E.M. 212 and senior standing. Economic, governmental, social, and labor aspects of mining as related to the management of a mining enterprise. 3 hr. rec. Mr. Sandy

224. Mining Engineering Problems. I, II. 1 to 6 hr. PR: Senior or graduate standing. Investigation and detailed report on a special problem in mining engineering related to coal mining, mineral mining, or geological, petroleum, and natural gas engineering. Supervision and guidance by a member of the graduate faculty. Staff

227. Mine Power Applications. I. 2 hr. PR: E.M. 222 or consent. Underground transmission systems, electrical controls for mining machinery, alternating current applications in coal mining, power costs and safety features. 2 hr. rec. Mr. McClung

228. Mine Equipment and Machinery Controls. II. 3 hr. PR: E.M. 227 or consent. Principles, application and use of electric and hydraulic devices and circuits for protection and control of mine machinery and equipment. 3 hr. rec. Mr. McClung

229. Advanced Mining Equipment Applications. I. 3 hr. PR: E.M. 228. Structural, mechanical, hydraulic and electrical characteristics of the more common items of mining equipment. Controls, electrical and hydraulic circuits, and mechanical transmissions with associated problems. Laboratory design of a control system for a mining machine. 2 hr. rec., 3 hr. lab. Mr. McClung

230. Elements of Geophysical Prospecting. I. 3 hr. PR: Geol. 151, Phys. 112. Principles, calculations and application of methods for locating subsurface oil, gas and mineral deposits. Mr. Laird

231. Geophysical Prospecting Laboratory. I. 1 hr. PR: E.M. 230 or concurrent registration in E.M. 230. Field and laboratory use of instruments used in geophysical prospecting. 3 hr. lab. and field. Mr. Laird

232. Petroleum Reservoir Engineering. I. 3 hr. PR: E.M. 204, E.M. 236. Concepts and applications of properties of rocks and rock-fluid systems which are fundamental to engineering analysis of petroleum reservoirs. 3 hr. rec. Mr. Wasson

233. Theory and Practice of Coal Preparation. SI. 4 hr. PR: Phys. 112, Math. 108, or consent. Theory of coal beneficiation processes and the design, operation, and control of coal preparation plants. Includes the theory and practice of sampling, crushing, sizing, cleaning, and drying of coal, the operation and maintenance of coal washing and auxiliary equipment, materials handling, plant efficiencies and quality control. The laboratory work consists principally of the determination of the cleanability characteristics of coal, interpretation of gravity separation data, chemical analysis, and the operation of typical coal washing equipment. Not open to students taking E.M. 217. 4 hr. rec., 4 hr. lab. Mr. Sandy

234. Applied Geophysics. II. 3 hr. PR: Phys. 112, Geol. 151, or consent. The application of the science of geophysics in prospecting for oil and minerals; and in the location and analysis of earthquakes. 3 hr. rec. Mr. Laird

235. Fundamentals of Well Logging. II. 3 hr. PR: Math. 108, E.M. 204, or consent. Principles of the various well logging methods and related calculations, with exercises in interpretation of actual data from actual well logs. 2 hr. rec., 3 hr. lab. Mr. Laird

236. Hydrocarbon Phase Behavior. I. 3 hr. PR: Phys. 2 or 112, E.M. 204 or concurrent registration in E.M. 204. The qualitative and quantitative phase behavior of single and multicomponent hydrocarbon systems with emphasis on applications to petroleum production engineering and petroleum reservoir engineering. 2 hr. rec. 3 hr. lab. Mr. Wasson

237. Composition and Properties of Oil Well Drilling Fluids. I. 3 hr. PR: E.M. 204, Chem. 163. Principles of drilling fluid control, including a laboratory for testing procedures and measurement of composition and properties. 2 hr. rec., one 3 hr. lab. Mr. Laird

238. Oil and Gas Law. II. 2 hr. PR: E.M. 204. Landowner's interest, the oil and gas lease, transfers of interest, conservation laws, contracts, business organization, sales, professional registration, patents. 2 hr. rec. Mr. Wasson

239. Advanced Petroleum Reservoir Engineering. II. 3 hr. PR: E.M. 232. Mechanics of fluid flow in porous media; production by depletion drive, by frontal displacement, by water drive, by segregation drive, secondary recovery. 3 hr. rec. Mr. Wasson

Graduate Division

301, 302. Advanced Mine Design. I, II. Credit arranged. Advanced detail design and layout of coal mine plant, particularly incorporating new ideas of machines and mining methods. Staff

351. Coal Mining. SI. 3 hr. PR: Chemistry, 10 hr.; physics, 8 hr.; and accompanied or preceded by general geology. Especially for students who are planning to teach mining subjects in high school. Not open to students taking E.M. 102, 111, or 212. Hours arranged. Staff

395, 396. Graduate Seminar in Coal Mine Operation and Administration. I, II. 3-6 hr. PR: B.S. Degree and consent of Committee. Group discussion and analysis of problems related to the production, preparation, marketing, and

utilization of coal with special assignments and emphasis in accordance with personal background and field of interest of the individual student. Staff

397. Research. I, II. Credit arranged. Individual problem in some phase of mining. Carefully prepared report required. Staff

The Graduate School

A list of graduate degrees offered by departments in the University which have been approved for graduate work may be found on page 73.

Complete information concerning graduate work may be found in the *Announcements* of the Graduate School, and in the *Announcements* of the various colleges and schools of the University.

REQUIREMENTS FOR THE GRADUATE DEGREE

General Regulations

1. CANDIDACY

Admission to candidacy for any graduate degree is conditioned upon the fulfillment of the requirements for admission to the Graduate School, and also the particular requirements of undergraduate and graduate preparation for the field of study in which the student wishes to specialize. Unconditional admission to candidacy for an advanced degree involves a suitable period of graduate work in residence in which the student demonstrates his ability to do work of graduate caliber.

2. SCHOLARSHIPS

No credits are acceptable toward an advanced degree which are reported with a grade lower than "C."

Reasonable standards of oral and written English must be maintained.

3. CURRICULUM

Credit toward a graduate degree may be obtained only for courses listed in the *Announcements* and numbered 200-399.

No more than 15 hours of graduate courses in any one semester nor more than 6 hours of graduate courses in any one term of the Summer Session may be carried by a student. Any exception to this rule must be approved in advance by the Dean of the Graduate School.

4. RESIDENCE AND EXTENSION

Residence credit for special field assignments and for work taken off the University campus shall be allowed only with prior approval of the Dean.

No more than 15 hours of extension work may be counted by any one student toward the Master's Degree.

For majors in Education no more than 12 hours by extension may be counted toward the Master's Degree and of these 12 no more than eight hours may be obtained before the student completes at least six hours in residence on campus.

Full-time in-service teachers may obtain no more than nine semester hours of credit toward the Master's Degree in any one academic year.

The maximum credit that students pursuing graduate work by extension may receive in any one field shall be 8 semester hours.

No more than 6 hours of graduate credit obtained in other approved institutions may be considered in meeting the requirements for the Master's Degree at West Virginia University.[1] Graduate credits so accepted toward the Master's Degree must meet the usual departmental requirements for a continuous and unified program of graduate study and will reduce correspondingly the number of hours of graduate work by extension offered in West Virginia University extension centers that may be offered in meeting the requirements for the Master's Degree.

[1]This regulation applies to all master's degrees based upon a total credit requirement of 30 to 46 semester hours. The degree of Master of Social Work is based upon a total credit requirement of 54 to 60 semester hours, 24 to 30 of which may be transferred under suitable conditions, but the last 30 of which must be earned and completed in West Virginia University.

No credits earned by extension prior to the admission of the student to graduate work and acceptance for graduate study may be counted toward meeting the requirements for the Master's Degree. Seniors in West Virginia Univrsity within ten hours of graduation may petition for graduate credit for courses not used to meet undergraduate requirements.

Each graduate student in residence, whether taking course work or engaged in conducting research or in writing a thesis or report, must register at the beginning of each semester or term during which graduate work is being done. He must be registered during the session in which he is to appear for final examination. Under exceptional conditions and with the prior approval of the Dean a graduate student may be permitted to meet a portion of the requirements for the degree in absentia, provided the customary residence and other requirements are met.

5. LIMITATION OF CREDIT LOADS FOR PART-TIME GRADUATE STUDENTS

Part-time graduate students will be required to reduce their credit loads in proportion to the outside service rendered and the time available for graduate study. In general, persons in full-time service to the University or other employer will not be permitted to enroll for more than 6 hours of work in any one semester or to obtain credit for more than 12 hours in any one academic year. In corresponding manner the maximum credit load for a single summer term of five weeks shall be 3 hours. Maximum credit loads for students who are employed are:

Basis of Employment	Maximum credit load[2] Per Semester	Per Summer Term of Five Weeks
Full-time employees	6	3
Three-fourths-time employees	9	3
Half-time employees	12	4
One-fourth-time employees	15	5

Part-time students employed on a basis other than those listed will be permitted credit loads in relative amounts.

6. THESES AND PROBLEM REPORTS

All theses and problem reports shall be presented in the form prescribed at least one month previous to the Commencement Day on which the degree is expected. If the thesis or problem is accepted, typewritten and bound copies shall be submitted to the Office of the Graduate School at least one week before the degree is to be conferred; a minimum of five copies of the master's thesis and doctor's dissertation, or four copies of the problem report, is required.

7. FINAL EXAMINATIONS

The candidate shall not be eligible for the final examination until his thesis or problem report has been approved by the examining committee. Following approval of the candidate's thesis or problem report and satisfactory completion of the courses in residence and satisfaction of other graduate requirements, he shall be given a final examination by his advisory committee. Examining committees for theses and for final examinations for advanced degrees shall contain no fewer than three members for candidates for the Master's degree, and no fewer than five members for candidates for the Doctor's degree. In order to have his thesis accepted or to be considered as having satisfactorily passed his examination, the candidate shall have no more than one unfavorable vote in each case.

[2]Right to petition. Under unusual circumstances credit loads in excess of those indicated may be permitted upon approval of a petition submitted in writing by the student. Such petitions must be submitted prior to enrollment for the excess credit load.

8. REQUESTS FOR DEGREE

At the time of registration for the semester or session in which the candidate expects to receive a graduate degree, he shall submit a formal request to the Dean of the Graduate School for the conferring of such degree. The candidate must have completed all requirements for the degree which he wishes to receive, at least one week before Commencement Day.

9. COMMENCEMENT ATTENDANCE

Candidates for degrees to be conferred at the close of the second semester are expected to be present in person to receive their degrees.

The School of Journalism

The first journalism instruction at West Virginia University consisted of a two-hour course in news writing offered in 1915 in the English department of the College of Arts and Sciences. The same department by 1920 offered more journalism courses, and in 1927 a separate Department of Journalism was established, built around a full professional curriculum.

The Board of Governors on April 22, 1939, separated the journalism department from the College of Arts and Sciences and reorganized it as a School of Journalism, with an administrative status similar to that of other schools and colleges of the University. Five full-time and four part-time persons and three graduate students now comprise the journalism staff.

Accreditation

The School of Journalism has been accredited by the American Council on Education for Journalism for the Advertising-Management and News-Editorial sequences. A.C.E.J. approval is held by only 47 colleges and universities.

The quality of the School's program also has been recognized by memberships in the American Association of Schools and Departments of Journalism and the American Society of Journalism School Administrators.

Aims

The School of Journalism's objectives are:

1. To recruit men and women capable of serving the public interest through careers in journalism.
2. To help these young people achieve proficiency in the techniques employed in reporting, editing, and administering newspapers and other publications, and in the skills of advertising and radio-television journalism.
3. To make it possible for them to acquire, through a liberal arts background as well as their professional studies, that understanding of society's problems which is essential for effective leadership in any field.
4. To acquaint them with the responsibilities which must be assumed by communications specialists, and with the opportunities which are available.
5. To provide essential training in journalism techniques and knowledge of the role of journalism in society.
6. To carry on systematic research pertaining to problems in the field of communications.
7. To serve the citizens and communications media of West Virginia and the nation to the fullest extent that the abilities of students and staff members will permit.

Standards

From the beginning, instruction in journalism at West Virginia University has been in accord with the best professional school standards. Emphasis has been on quality, not numbers.

Staff members have been engaged with careful attention to their individual ability to give expert instruction in particular fields. Course offerings are changed from time to time to correspond to progressive changes in the profession. Class sizes have never reached proportions where individual instruction has had to be sacrificed. The School conforms to recognized national standards.

Location and Equipment

The School of Journalism, after being housed in Woodburn Hall for more than 32 years, moved into Martin Hall in 1953, where it occupies almost the entire building.

With its basement and three stories, Martin Hall has the equivalent of 32 standard-size classrooms, 29 of which provide the School with lecture rooms, an audio-visual classroom, an auditorium seating almost 200 persons, a front business office and

advertising seminar room, an advertising layout laboratory, a typographical laboratory, a newsroom, reading room, photography laboratory and engraving rooms, a radio-television laboratory, an advertising laboratory, a public relations and industrial journalism laboratory, a room for the West Virginia Journalism Hall of Fame, and offices for the instructional and editorial staffs.

In many respects the rooms devoted to instruction in newspaper editing and publishing are equipped like the editorial and business quarters of a large weekly or small-city daily newspaper. The newsroom contains a U-copy desk, work tables and desks, telephones, and 25 typewriters. There are teletypewriters on which United Press International dispatches are received from 2 P.M. to 3 A.M. daily. These reports are edited by journalism majors working under the supervision of faculty members.

The adjacent reading room contains newspapers, magazines, and some reference works. It receives daily representative newspapers and magazines of the nation as well as almost all West Virginia dailies and weeklies. It makes available for study about 40 dailies, many weeklies, a number of the standard magazines, and a collection of high school and college papers. The school subscribes to the important special periodicals of the profession.

For instruction in typography and advertising production, a laboratory has been equipped not only for providing demonstration material but also for giving the individual student practice in the setting and adaptation of type. The advertising-layout laboratory is supplied with special tables and desks for applied instruction. The facilities of the photography laboratory include those fundamental pieces of equipment essential to basic camera-print techniques. The school's radio-television laboratory is in 300 Martin Hall. Here, too, the school's new telephone reporting laboratory is housed. In addition to such basic items as tables, typewriters, and telephones, the room has a 21-inch television receiver and a radio receiver which can receive both standard and short-wave broadcasts. Other equipment used in training students in the different aspects of broadcast journalism includes a 16-mm. motion picture camera, a 16-mm. titler, a 16-mm. motion picture projector, a balopticon, two film editors with splicing units and viewers and a transparent tape slicer, two bar-light units, two standard tape recorders, and a wire recorder. The School offers comprehensive programs of instruction in industrial publications and public relations. To introduce students to the limitations and possibilities of type, the School also has one Linotype and a medium-sized automatic Heidelberg platen press.

The journalism building also contains the office of the West Virginia Press Association, which makes available certain publications, periodicals, information, and other materials from its files and records.

Additional opportunities for observation and practice, especially in the business and mechanical aspects of newspaper work, are provided at the plant of the West Virginia Newspaper Publishing Company in Morgantown, where the *Daily Athenaeum*, the student newspaper, is printed under contract.

Practice Opportunities

Opportunities for applying the principles of sound newspaper and radio-television practice are good. The *Daily Athenaeum*, a four-day campus newspaper, is produced by journalism students in laboratories conducted from 3 to 5:30 P.M. and from 7 to 11 P.M. daily except Friday, Saturday, and Sunday. Reporters working on news runs cover the University community thoroughly. Trained deskworkers not only edit the local reporters' copy but also prepare for publication the dispatches of state, national, and world origin received on the United Press International wire. Local pictures are taken by the newspaper's staff photographers, and other news pictures are selected from mats purchased from a national distributor.

All reporters serve as correspondents of weekly and daily newspapers. Majors pursuing the advertising-management sequence are required to spend no fewer than five hours a week during one semester soliciting advertising accounts for the campus daily, writing copy, and otherwise servicing their accounts, and making collections for the advertising sold.

Some students get additional practice by working part-time for Morgantown dailies or by taking vacation positions on newspapers of their home communities. Majors are especially urged to obtain vacation work on a good weekly or daily newspaper during the summers that precede their junior and senior years. As a rule,

student journalists have staff positions on, or are regular contributors to, other campus publications.

Under a formal state-wide intern training program which became effective in 1959, students with at least a 2.0 average in all subjects and a 3.0 average in journalism courses, or who have special consent, are employed by West Virginia newspapers for a 10-12 week period during the summer at a salary of $50 per week. These internships are available to students in the summers preceding their junior and senior years.

Training for students preparing for jobs in radio and television is conducted along workshop lines. In the radio courses, these students produce newscasts at local broadcasting stations under supervised laboratory conditions. In the television courses they function as "film stringers" in covering University and Morgantown events for regional television broadcasting stations.

In their "downtown" radio labs, the students are responsible for gathering and writing the news for five news programs a week and their work is evaluated during class meetings in Martin Hall. While the main purpose of this work is to develop writing ability, meaning the ability to present information in a conversational manner, students also have an opportunity to acquire some broadcasting experience. This opportunity comes in the documentary-type news programs which they write and present on the air.

Most of the students' television work involves film production. When they have mastered the principles of motion picture photography, they apply TV techniques to these principles in "dry run" assignments. Later, they have an opportunity to shoot regional news events for television stations requesting film coverage. Film editing and splicing techniques are stressed during the laboratory periods.

The Placement of Graduates

During the last four decades, alumni who completed all or most of the professional courses in journalism have found little difficulty in finding desirable positions. Although the school cannot guarantee positions to graduates, it is glad to assist them in learning of openings and in making contact with employers. To this end it maintains without charge a placement register for both current and past graduates. Students and alumni also are invited to make use of the University Placement Service.

Courses Open to Non-Journalism Majors

The School of Journalism desires to share its knowledge of the philosophy, history, principles, practices, and techniques of journalism and mass communications with all University students, regardless of major study, who desire to elect courses or to minor in the field. Many courses, as indicated in the list printed in the Courses of Instruction, are open to non-majors.

Proficiency in English

Regular students of the University or transfers from other colleges and universities are expected to speak and write the English language with a marked degree of correctness. This means that in their English composition courses they should have achieved a standing of approximately "B" or higher. If upon entering the School of Journalism a student is found deficient in English he will be required to take one or more additional courses in fundamental composition.

Typewriting

Before or soon after entering the University, a student planning to become a journalism major should learn the touch system of typing. From the beginning every reporter is expected to submit copy in neat typewritten form and to have a typing speed of no fewer than forty words a minute. If the reporter cannot demonstrate such typing ability, he may be asked to withdraw from the reporting course. He will find it advantageous to have his own machine.

REQUIREMENTS FOR THE DEGREE

THE BROAD EDUCATIONAL BACKGROUND

The School of Journalism emphasizes a strong liberal arts background for its students. Curricula are arranged so that students devote approximately 75 per cent of their study to broad liberal arts subjects and 25 per cent to professional courses in journalism.

This philosophy of journalism education is in accord with what appears to be the best current thought in both educational and professional circles, and it is the goal of the American Council on Education for Journalism.

It is enunciated by requiring a minimum of 30 hours, and a maximum of 33, in journalism within the first 128 hours offered for the B.S.J. degree, and by insistence on a "content" field of study as a minor. In addition to learning certain techniques and gaining journalistic knowledge and insights, students in their journalism courses are enabled to synthesize and bring into sharp focus the knowledge gained in all their university studies. The content of at least half their courses in journalism lies well within the area of general knowledge leading to sound citizenship and enriched living, regardless of their future career roles. They develop skills of communication; gain an understanding of the nature of major local, state, national, and world problems and of the role of mass media in the democratic process; learn to evaluate intelligently both news and opinion as expressed through print and broadcast journalism, and in fact, become alert, informed consumers, as well as producers, of news and views upon which decisions are generally made in a democracy.

Among the foundation courses that receive special attention are these: the English language and literature; foreign language; theoretical and applied economics and business administration; national, state, and local government and the governmental systems of foreign countries; American politics and international relations; the problems of management and labor and their social implications; American and European history; philosophy, psychology, and natural science. Persons capable of producing newspapers or broadcasting news events and their interpretation with which today's readers and listeners will be satisfied must be thoroughly informed about all aspects of the modern world. They must also know the art and science of the best journalistic practice.

BACHELOR OF SCIENCE IN JOURNALISM

A candidate who has satisfied all general requirements of the University and who as a regularly enrolled student of the School of Journalism has earned 64 semester hours of credit of a value specified later in the Scholarship section and in the subjects listed in one of the professional curricula hereinafter outlined will be recommended for the degree of Bachelor of Science in Journalism or Bachelor of Science in Journalism Education, provided the combined number of his credits acquired as a pre-journalism student and as a regularly enrolled journalism major totals no fewer than 128. As a minimum professional requirement, 22-25 of the 64 semester credits earned after the student has enrolled in the school must be obtained in journalism subjects. Moreover, no fewer than 60 of the 64 hours mentioned above shall be obtained in courses numbered between 100 and 300. Further, no student will be permitted to offer fewer than 30 nor more than 33 hours of journalism courses among the 128 hours necessary for the degree.

Maximum and Minimum Work

During each semester a regular student may register for no fewer than fourteen and no more than eighteen hours. To obtain permission to carry eighteen hours, a student must have maintained an average in all subjects of "B" or higher during the preceding semester. Variations from the foregoing rule will be allowed only on recommendation of the School's Committee on Scholarship.

Natural or Physical Sciences

A candidate for the degree must have acquired 8 hours in one of the following natural sciences: biology, botany, chemistry, geology, physics, and zoology, or 8 hours in the physical sciences.

Foreign Languages

To be eligible for the B.S.J. degree, a student must have completed 12 semester hours in one language in college; or he must have offered 2 units in a foreign language for entrance and must have completed 6 hours in the same language in college, above courses numbered "1" and "2."

Exemption from Requirements

Exemption from any professional course because of practical newspaper experience that a student may have had will be granted only after the student has submitted satisfactory evidence as to the nature and quality of the experience. For such exemptions approved advanced courses shall be substituted. Credit toward a degree can be granted for practical work only when it has been done under the supervision of an accredited instructor.

PROFESSIONAL ADVISERS

A staff member serves as adviser in each curriculum with the Dean acting as general adviser for all journalism students. Not only juniors and seniors, but pre-journalism freshmen and sophomores as well, should consult him about all scholastic and curricular problems that may arise.

THE MINOR FIELD

To meet the requirements for a minor, a student must earn at least 15 semester hours in some subject other than journalism, 12 of which must be in courses numbered 100-190 or 200-299. The first minor must be in a "content" area of study. Minor fields especially recommended for all journalism students are economics, history, English, political science, and sociology. In addition, commerce is recommended for Advertising-Management, Public Relations, and Technical Journalism majors; and agriculture, the natural sciences, the medical sciences, and engineering are recommended for Technical Journalism majors.

Students in other areas of study who desire to minor or take extensive electives in journalism are welcome and will be given special counseling to obtain the information and skills which they desire. Such students should consult with both their own advisers and the Dean of the School of Journalism regarding the journalism courses in which they are to enroll.

OTHER DEGREE REQUIREMENTS

Graduates of the School of Journalism are expected to be not only citizens of good manners, of honorable and upright character and of respect for other people and their ideas, but alert individuals of better-than-average intellectual attainments. It is urged, therefore, that all candidates for a degree aspire to earn at least three times as many grade points as they have credit hours. To be eligible for graduation, a student must earn as a minimum during the junior and senior years an average of 2½ grade points for every semester hour of required work in both journalism and background courses.

In addition to the general experience each journalism major will obtain on the *Daily Athenaeum* in connection with required or elective courses, no major will be approved for graduation unless during either his junior or senior year he has served for not less than one semester in some editorial or executive capacity on the *Daily*

Athenaeum, or unless he has offered in place of this service a substitute project approved by his adviser.

No student will be recommended for the degree unless he has shown to the satisfaction of the faculty that he possesses abilities and qualities which give promise that he can do adequate work in professional journalism and will reflect credit upon the school.

By order of the Board of Governors, no degree will be conferred upon any candidate prior to payment of all tuition, fees, and other indebtedness to any unit of the University.

PRE-JOURNALISM CURRICULUM

The School of Journalism has designated the principal courses in which a pre-journalism freshman and sophomore should enroll in order to help him fulfill the desired program leading to the degree of Bachelor of Science in Journalism. These courses not only provide a sound basis on which a liberal education can be built, but also offer the student an introduction to several fields from which he later will select his minor.

FIRST YEAR

	Hr.
English 1 and 2—Composition and Rhetoric	6
History 1 and 2 or Humanities 1 and 2	6-8
Natural or Physical Science	8
Foreign Language	6
Journalism 1—Introduction to Mass Communications	2
Journalism 2—Lectures in Journalism	1
Physical Education	2
Military or Air Science 1 and 2	4
Electives as needed	

SECOND YEAR

	Hr.
Journalism 18—News Writing	3
Journalism 19—Copy Editing and Makeup	3
History 52—Growth of American Nation to 1965	3
History 53—Making of Modern America 1865 to Present	3
Foreign Language (if needed)	6
English 6—American Literature	3
English 4 or 164—English Literature	3
Economics 1 and 2—Principles of Economics	6
Military or Air Science 3 and 4	4
Physical Education (Women)	2
Electives as needed	

CURRICULA

The School of Journalism offers five curricula designed to equip students for specialized branches of journalism practice or for occupations or professions for which journalistic training is desirable or necessary preparation. Each sequence leads to the degree of Bachelor of Science in Journalism.

ADVERTISING-MANAGEMENT CURRICULUM

This is a sequence designed to prepare students for careers in creative advertising, advertising sales, and newspaper management.

THIRD YEAR

	Hr.
*Accounting 1 and 2—Principles of Accounting	6
**Psychology 1—Introduction to Psychology, or Philosophy 104—Introduction to Philosophy	3
Pol. Sci. 2—American Federal System	3
Marketing 111—Principles of Marketing	3
Marketing 115—Principles of Retailing	3
Journalism 110—Typography and Printing Processes	2
Journalism 113—Principles of Advertising	3
Journalism 115—Advertising Copy and Layout	2
Electives as needed	

FOURTH YEAR

	Hr.
Journalism 101 or 201—Interpreting Current Events	1
Journalism 108—The Community Newspaper	2
Journalism 109—Applied Newspaper Management	2
Journalism 114—Newspaper Advertisement Selling	2
Journalism 239—Seminar in Advertising Problems	2
Electives as needed	

*Accounting 1 and 2 are required for Management majors, may be elected by Advertising majors.

**Psychology 1 is required of Advertising majors. Management majors may elect either Psychology 1 or Philosophy 104.

Advertising-Management majors will elect from 7 to 9 additional hours in journalism from the following courses: Journ. 116, 119, 120, 122, 124, 170, 212, 220, 227, and 230.

NEWS-EDITORIAL CURRICULUM

This is a sequence intended primarily for those who wish to prepare themselves for writing or editing positions with newspapers.

THIRD YEAR

	Hr.
Psychology 1—Introduction to Psychology, or Philosophy 104—Introduction to Philosophy	3
Pol. Sci. 2—American Federal System	3
Pol. Sci. 120—State and Local Government	3
Journalism 101 or 201—Interpreting Current Events	1
Journalism 118—Reporting	3
Journalism 119—Advanced Editing and Makeup	3
Journalism 120—News Photography	2
Electives as needed	

FOURTH YEAR

	Hr.
Journalism 227—History of Journalism	3
Journalism 128—Reporting of Public Affairs	2
Journalism 230 and 235—Editorial and Law of the Press	4
Electives as needed	

News-Editorial majors will elect from 4 to 7 additional hours in journalism from the following courses: Journ. 108, 110, 113, 122, 170, 212, and 220.

PUBLIC RELATIONS CURRICULUM

This sequence is designed for students who wish to prepare for work in a public relations firm or public relations department, or for the position of information specialist in business, industry, organized labor, government, education, welfare agencies, or the armed services.

THIRD YEAR

	Hr.
Journalism 110—Typography and Printing Processes	2
Journalism 113—Principles of Advertising	3
Journalism 118—Reporting	3
Pol. Sci. 120—State and Local Government	3
Psychology 1—Introduction to Psychology	3
Psychology 216—Attitudes and Propaganda	3
Speech 11—Public Speaking	3
Electives as needed	

FOURTH YEAR

	Hr.
Economics 115—Labor Problems	3
Journalism 120—News Photography	2
Journalism 101 or 201—Interpreting Current Events	1
Journalism 212—Public Relations	3
Journalism 213—Industrial Journalism	2
Journalism 230—Editorial and Law of the Press	2
Electives as needed	

Public Relations majors will elect from 4 to 7 additional hours in journalism from the following courses: Journ. 119, 122, 123, 124, 125, 220, and 235.

RADIO-TELEVISION CURRICULUM

This sequence is designed for students who want to work in the news and information areas in the broadcasting field. Course offerings are geared to the needs of those desiring to prepare for such positions as radio-TV news reporter, newscaster, and news executive; TV news cameraman; wire service radio editor; and station salesman, or commercial copy writer.

THIRD YEAR

	Hr.
Journalism 118—Reporting	3
Journalism 120—News Photography	2
Journalism 122 and 123—Radio and Television Reporting	4
Psychology 1—Introduction to Psychology, or Philosophy 104—Introduction to Philosophy	3
Pol. Sci. 2—American Federal System	3
Electives as needed	

FOURTH YEAR

	Hr.
Journalism 101 or 201—Interpreting Current Events	1
Journalism 116—Radio-Television Advertising	2
Journalism 124—Television News Photography	2
Journalism 125—Television Film Reporting and Editing	2
Pol. Sci. 120—State and Local Government	3
Electives as needed	

Radio-Television majors will elect 6 to 9 additional hours in journalism from the following courses: Journ. 113, 119, 128, 212, 213, 220, 227, 230, 235.

TECHNICAL JOURNALISM CURRICULUM

This is a sequence designed to enable a student to obtain proficiency in journalism while acquiring extensive knowledge in some secondary technical area, such as agriculture, home economics, the medical sciences, the natural sciences, or commerce.

THIRD YEAR

	Hr.
Psychology 1—Introduction to Psychology, or Sociology 1—Introduction to Sociology	3
Pol. Sci. 2—American Federal System	3
Journalism 101 or 201—Interpreting Current Events	1
Journalism 118—Reporting	3
Journalism 119—Advanced Editing and Makeup	3
Journalism 220—Newspaper and Magazine Article Writing	2
Electives as needed	

FOURTH YEAR

	Hr.
Journalism 110—Typography and Printing Processes	2
Journalism 212—Public Relations	3
Journalism 213—Industrial Journalism	2
Electives as needed	

Technical Journalism majors will elect from 6 to 9 additional hours in journalism from the following courses: Journ. 119, 120, 122, 123, 124, 125, 227, 230, and 235.

PROGRAM FOR PROSPECTIVE HIGH SCHOOL JOURNALISM TEACHERS

Students may obtain the Bachelor of Science in Journalism Education degree and also qualify for a first-class professional certificate in West Virginia with teaching fields in English and social studies, and a minor teaching field in journalism, Grades 7-12, by taking the following course of study:

FIRST YEAR

	Hr.
English 1 and 2	6
History 1 and 2 or Humanities 1 and 2	6-8
Social Science 1 and 2	8
General Biology 1 and 2, or Physical Science 1 and 2	8
Journalism 1 and 2	3
Physical Education	2
Military or Air Science 1 and 2	4

SECOND YEAR

	Hr.
English 3 and 4, or 163 and 164	6
English 5 and 6	6
Journalism 18 and 19	6
Political Science 2	3
History 52 and 53	6
Education 105	3
Military or Air Science 3 and 4	4
Physical Education (women)	2

THIRD YEAR

	Hr.
Journalism 118 and 119	6
Journalism 110 and 120	4
Economics 1	3
Education 106	3
Education 109, or approved elective	2
Music 10	2
Speech 3, 6, 11, or 29	3
Sociology 1 or 104	3
Art 30 or 130	2
Health Education 101	2
Geography 107 or 109	3

FOURTH YEAR

	Hr.
Literature	6
History 150 or 250	3
Journalism 227	3
Journalism 215	2
Journalism 230 and 235	4
Journalism 101 or 201	1
Journalism 212	3
Social studies, upper division, elective	3
Education 124	6
Education 120	4
Education 150-170	2

MINOR IN TEACHER TRAINING IN JOURNALISM FOR NON-JOURNALISM MAJORS

For students in other schools and colleges following one of the University's teacher-training programs, the School of Journalism has set up a teaching minor in journalism. The program is intended for persons who plan to be advisers for high school newspapers and yearbooks as well as teachers.

This minor requires a minimum of 16 hours in journalism (only 14 hr. additional for those whose first teaching field is English, since Journ. 215 is included in that program). It includes the following courses:

REQUIRED COURSES

	Hr.		Hr.
Journ. 1—Introduction to Mass Communications	2	Journ. 215—High School Journalism	2
Journ. 18—News Writing	3	Journ. 227—History of Journalism	3
Journ. 19—Copy Editing and Makeup	3		
Journ. 113—Principles of Advertising	3		

RECOMMENDED COURSES FOR ADDITIONAL CREDIT

Journ. 108—The Community Newspaper	2	Journ. 212—Public Relations	3
Journ. 110—Typography and Printing Processes	2	Journ. 220—Newspaper and Magazine Article Writing	2
Journ. 120—News Photography	2	Journ. 230 and 235—Editorial and Law of the Press	4

ELECTIVE COURSES IN JOURNALISM FOR STUDENTS IN TEACHER-TRAINING PROGRAMS

Students in other schools and colleges following one of the University's teacher-training programs may elect any of the courses in journalism *listed above*. Journalism 18 is a prerequisite for Journalism 19. History 52 and 53 are prerequisites for Journalism 227. All other courses may be taken without prior journalism study.

PROGRAM FOR PROSPECTIVE JOURNALISM TEACHERS IN COLLEGES AND UNIVERSITIES

The student should obtain the Bachelor of Science in Journalism degree, then acquire a master's degree in the field, either before or after obtaining some practical experience with the media. The doctorate is essential to fullest advancement.

GRADUATE STUDY

The School of Journalism offers work leading to the degree of Master of Science in Journalism, as well as a graduate minor for students taking the master's degree in a field related to journalism. Graduate students may also elect journalism courses.

Complete information concerning the graduate program in Journalism may be found in the *Announcements* of the Graduate School or the *Announcements* of the School of Journalism.

COURSES OF INSTRUCTION

1. Introduction to Mass Communications. I, II, S. 2 hr. Recommended for all University students; required of journalism majors. Role of the mass communicator in developing the political, social, and economic fabrics of a democratic society. Organization and function of newspapers, magazines, broadcast stations, and other principal media of mass communications, including the role of advertising.

2. Lectures in Journalism. II. 1 hr. Open to all University students; required of journalism majors. A series of one-hour weekly addresses by specialists representing the principal mass communications industries and professions.

18. News Writing. I. 3 hr. PR: English 1 and 2, with an average of 2.5 or higher for the two courses, or consent. Open to all University students; required of all journalism majors. Two lec. and a 2-hr. lab.-demonstration period. Fundamentals of news gathering and writing.

19. Copy Editing and Makeup. II. 3 hr. PR: Journ. 18. Required of all journalism majors. Two lec. and a 2-hr. lab.-demonstration period. The editing of news copy, headline writing, and introduction to page makeup.

101. Interpreting Current Events. I, II. 1 hr. PR: Sophomore standing. Open to all University students; required of all journalism majors. A study of national and world news developments, their backgrounds and their meanings. May be repeated for a maximum of four hours credit.

108. The Community Newspaper. I. 2 hr. Open to all University students; required in Advertising-Management curriculum. Fundamental problems and techniques in the operation and management of smaller community newspapers. One lec. and two lab. hours.

109. Applied Newspaper Management. II. 2 hr. PR: Journ. 108 or consent. Required in Advertising-Management curriculum. Organization, operation, and management of daily newspapers. One lec. and two lab. hours.

110. Typography and Printing Processes. I, II, S. 2 hr. Open to all University students; required in Advertising-Management, Public Relations, and Technical Journalism curricula. Historical development of type, printing processes, and paper. Practice in handsetting type, preparing forms, and operating platen and offset presses and Linotype machine. Identification of type and its application to advertising, newspaper, and magazine production.

113. Principles of Advertising. I, II, S. 3 hr. Open to all University students; required in Advertising-Management and Public Relations curricula. Two lec. and a 2-hr. lab. period. Survey of the function of advertising in the American economic system for national and retail advertisers. Study of individual advertising and media, copy and layout problems, appeals, research, production, schedules, federal and state laws affecting advertising, and ethics. Practical lab. work in writing and layout of advertisements.

114. Newspaper Advertisement Selling. I, II. 2 hr. PR: Journ. 113. Required in Advertising-Management curriculum. One conference and five lab. hours arranged. Selling of space, preparation of retail copy, and servicing local newspaper accounts for the *Daily Athenaeum*. Students handle specific assignments, develop new accounts, and apply the mechanics and psychology of space-selling. Enrollment restricted.

115. Advertising Copy and Layout. II. 2 hr. PR: Journ. 113 or Marketing 120. Required in Advertising-Management curriculum. Two lec. and a 2-hr. lab. arranged. Applying tested advertising methods to the preparation of merchandising copy; layout design; production of publication advertising. Emphasis on sales appeals, attention factors, layout planning, illustrations, copy writing, copy testing, and production methods and problems for retail and national advertisers.

116. Radio and Television Advertising. I. 2 hr. Open to all University students; required in Radio-Television curriculum. Historical development of radio and TV as advertising media, including rates, listener surveys, sponsorship problems, and promotion. Writing of radio and television commercials, programs, and preparation of sales and sales promotion plans for stations, national and retail advertisers. Federal regulations affecting broadcast media.

118. Reporting. I, II. 3 hr. PR: A grade of "C" or higher in Journ. 18. Required of majors in all sequences except Advertising-Management. Nine lab. hours on the *Daily Athenaeum* and one critique hour.

119. Advanced Editing and Makeup. I, II. 3 hr. PR: A grade of "C" or higher in Journ. 19. Required of majors in News-Editorial and Technical Journalism curricula. Nine lab. hours on the *Daily Athenaeum* and one critique hour.

120. News Photography. I, II. 2 hr. Open to all University students; required in News-Editorial, Public Relations, and Radio-Television curricula. One lec. hour, one demonstration hour, and one 2-hr. lab. An introduction to basic photographic principles. Students use several types of cameras, and learn to develop, print and enlarge. No laboratory fee is charged for this course, but each student is required to purchase a photography kit which costs approximately $10. The kit contains all the film and photographic paper he will use during the course; chemicals are provided by the School.

122. Radio and Television Reporting. I. 2 hr. PR: Journ. 18 or consent. Required in Radio-Television curriculum. A lab. course providing training in skills required in the writing and broadcasting of news; practice (including use of tape recorder) in reporting and editing news for programs with various formats. One lec. and 3 lab. hours.

123. Radio and Television Reporting. II. 2 hr. PR: Journ. 122 or comparable experience, and consent. Required in Radio-Television curriculum. A continuation of Journ. 122. Practice in getting, writing, and editing local and regional news for broadcast. One lec. and 3 lab. hours.

124. Television News Photography. I. 2 hr. PR: Journ. 120 or consent. Required in Radio-Television curriculum. Theory and practice in basic motion picture techniques, with emphasis on the special requirements of television news programs. One lec. and 3 lab. hours.

125. Television Film Reporting and Editing. II. 2 hr. PR: Journ. 124. Required in Radio-Television curriculum. Production of film clips for news programs on regional television stations; practice in editing and integration of visual materials for TV newscasts. One lec. and 3 lab. hours.

128. Reporting of Public Affairs. II. 2 hr. PR: Journ. 18 or comparable experience and consent. Required in News-Editorial curriculum. Reporting of routine and extraordinary activities of municipal and county government and of miscellaneous civic areas. Study of trends in local government structure. Visits to courts and public offices. A consideration of media responsibility as interpreters of public affairs.

170. Mechanical Composition. II. 1 hr. Open to all University students. The fundamentals of operation, care and maintenance of the Linotype. The use of mechanically produced type in newspapers and other publications. Special problems in mechanical composition. One lec. and one lab. hour.

201. Interpreting Current Events. S. 1 hr. Open to all University juniors, seniors, and graduates. Journalism majors may substitute for the Journ. 101 requirement. A study of national and world news developments, their backgrounds and their meanings.

212. Public Relations. I, II, S. 3 hr. Open to all University students; required in Public Relations and Technical Journalism curricula. Principles, problems, and practices concerned in the relationships of businesses, industries, and non-profit organizations with their respective publics; practice in the evaluation of existing PR programs and their refinement for further effectiveness.

213. Industrial Journalism. II. 2 hr. Open to all University students; required in Public Relations and Technical Journalism curricula. A study of the relations between industry and its many publics, with emphasis on internal and external

company publications as public relations media. Extensive practice in planning and writing materials and in page makeup for industrial publications and trade journals.

215. High School Journalism. II, S. 2 hr. Open to all University students. A survey of scholastic publications problems and techniques; suggested methods of instruction.

220. Newspaper and Magazine Article Writing. II. 2 hr. Open to all University students; required in Technical Journalism curriculum. A seminar-type course devoted to the writing, editing and marketing of features, including reviews and critical articles.

227. History of Journalism. I, S. 3 hr. PR: History 52 and 53. Open to all University students; required in News-Editorial curriculum. A study of the impact of the American press on the nation; the development of today's communications media from their beginnings in 17th Century England and in the American colonies; an examination of the great names in journalism from the standpoint of their contributions to today's journalism; freedom of the press and its current implications.

230. Editorial and Law of the Press. I. 2 hr. Open to all University students; required in News-Editorial and Public Relations curricula. Writing and analyzing editorials and columns; a study of the editorial page and editorial ethics, problems and policies; a study of the vital elements of libel, privacy, contempt, and other phases of law of the press.

235. Editorial and Law of the Press. II. 2 hr. Open to all University students; required in the News-Editorial curriculum. A continuation of Journ. 230.

239. Seminar in Advertising-Management Problems. II. 2 hr. PR: Senior standing and major or minor in advertising. Required in Advertising-Management curriculum. Current trends in advertising, merchandising, and distribution problems. Students develop individual projects in some phase of advertising or management.

241. Journalism Problems. I, II, S. 1-3 hr. For seniors and graduates. An intensive study, independently conducted, of a specialized area or problem in journalism to be approved by the Dean.

242. Advanced Journalism Problems. I, II, S. 1-3 hr. A continuation of Journ. 241.

243. International Communications. I. 3 hr. International wire services. Coverage of world news in newspapers of the United States and foreign countries; and desirability of a free flow of information to and from the United States. United Nations efforts to lower news barriers will be examined.

301. Research Methods and Literature. I, S. 3 hr. A study of methods common to communications research; critical examination of communications literature; independent research project by each student.

302. Seminar in Communications Theory. II, S. 3 hr. Historical development of the mass media; problems of communicating with the various publics; general problems of contemporary mass media.

312. Seminar in Institutional Relations. II. 3 hr. A study of the problems of public relations and public information officers of educational institutions of higher learning and public service organizations; thorough study of the publics which these officers attempt to reach.

315. Seminar in Journalism Education. S. 3 hr. Discussion of journalism educational problems. Each student will do an individual research project planned to provide for his professional development as a teacher of journalism. Emphasis on secondary school problems.

322. Seminar in Radio-Television Problems. S. 3 hr. Investigation and discussion of current problems and practices in the field of broadcast journalism. The student and the instructor will choose a problem, or a phase of a problem, for analysis and research as the course progresses.

339. Seminar in Advanced Advertising-Management Problems. II. 3 hr. Recently developed ideas and techniques in advertising, advertising research, and media management.

343. Seminar in the Foreign Press. II. 3 hr. Studies in legal and communications problems of the international flow of news and opinion; international press codes; communications media of major countries.

380. Thesis. I, II, S. 2-6 hr.

The College of Law

The College of Law, established in 1878, is the oldest professional school in the University.

In 1897 the course of study was increased from one year to two years. Since 1912 the degree of Bachelor of Laws has been conferred only upon satisfactory completion of three years of law-school work. From 1913 to 1924 the requirement for admission was one year of college work; from 1924 to 1931 the requirement was two years and from 1931 to 1958 the requirement was three years, and since 1958 the minimum pre-law requirement for admission to the College of Law has been a baccalaureate degree from an institution of approved standing.

In 1914 the College of Law was admitted to membership in the Association of American Law Schools, an organization of leading schools established for the purpose of maintaining high standards in legal education. The College of Law also is on the list of schools approved by the American Bar Association.

The Law Building

The College of Law occupies a fireproof building, erected for its use in 1923. The building is three stories high. It contains two classrooms, two seminar rooms, and a practice-court room, as well as private offices for each member of the staff. The library has a reading room accommodating the entire student body. In addition, the building has a locker room and club rooms for the students.

The Law Library

The Law Library contains more than 64,000 volumes. It includes reports of the highest courts of all states, insular possessions, and the District of Columbia, with the exception of a few volumes no longer obtainable, together with published reports of the lower courts of various states; the National Reporter System, and reports of the Federal courts and commissions; selections of annotated cases; the American and the English encyclopedias of law; and the American Digest. It also contains reports of the English courts, as contained in the English Reprint and the Law Reports, as well as the Irish reports, the Scotch reports, and the more important Canadian and Australian reports; the English statutes and the statutes of the various states, as well as Federal statutory material, including more modern codes and compilations; a complete collection of codes and session laws of the Virginias from the time of early settlers; treatises and textbooks, representative fairly of the legal literature dealing with common law and with civil law, including a large amount of old English historical material.

In addition to these, there are legal periodicals and an extensive collection of bar association reports and legal miscellany; briefs and records of cases decided by the Supreme Court of Appeals of West Virginia, now totaling more than 1,200 volumes, together with briefs and records of the more recent cases in the Circuit Court of Appeals of the United States for the Fourth Circuit.

Admission to the Bar

Under the provision of the West Virginia Code those who receive the degree of Bachelor of Laws from West Virginia University may be admitted to the bar without further examination.

All persons seeking admission to the West Virginia bar, except those who hold the degree of Bachelor of Laws from West Virginia University, are required to pass the state bar examination.

Information as to the bar examinations and as to other matters relating to admission to the bar may be obtained upon inquiry directed to the Secretary, State Board of Law Examiners, Charleston, West Virginia.

REQUIREMENTS FOR DEGREES

BACHELOR OF LAWS

The degree of Bachelor of Laws is conferred upon those who have met the requirements for entrance to the College of Law as candidates for this degree and who have satisfactorily passed examinations in courses aggregating eighty-one credit hours, distributed over three years' residence. They must also have obtained an average grade of "C" as hereinafter provided. Except with the permission of the Scholarship Committee, these eighty-one hours must be taken in no more than seven semesters or the equivalent thereof in summer school and the last twenty-seven hours of work must be taken in the College of Law of West Virginia University. When a student, because of admission with advanced standing from another law school, needs less than eighty-one hours in order to satisfy the requirements for this degree, the "C" average required for graduation is computed on the basis of work taken in the College of Law. No student may receive the degree of Bachelor of Laws without at least three semesters in residence at the College of Law and the successful completion of courses aggregating at least one-half of the total number of hours required for graduation.

PROGRAM OF INSTRUCTION

It is the primary aim of the College of Law to give the student an adequate preparation for the practice of law. This involves not merely imparting a knowledge of the legal rules and other materials which courts and administrative tribunals employ, but also, what is equally important, a training in the techniques of legal thinking and, so far as it is feasible to do so, in the practical skills of the profession. Some courses are especially designed to acquaint the student with the realities of practice, including the drafting of legal instruments and personal participation in the trial of cases in Practice Court. To the extent that it is practicable to do so, cases are tried in Practice Court exactly as they would be tried in an ordinary court. General information as to the nature of the training to be acquired in Practice Court and in the prerequisite course on Practice and Procedure is set forth *infra* under *Description of Courses*.

In most courses the work of the student is based chiefly upon the study and discussion of decided cases and statutes, with collateral reading of textbooks and periodicals, elucidated by free discussion in class. In all courses special emphasis is given to those West Virginia cases, statutes and procedures that differ from the general law. Thus, although it is an aim of this College to give to West Virginia students a training which is not available at any other law school, it is at the same time a fundamental objective of this College to give every student such a general and practical legal training that he will be adequately qualified to practice law in any other state.

The over-all objective of the College of Law connotes, among other things, an attempt to train the student to discover and solve the ever-varying problems which constantly confront lawyers, courts and administrative tribunals; and this, in essence, envisions cultivating in the student a capacity to think intensely and inquiringly, an ability to make searching analyses of complex fact situations which will disclose the legal questions involved therein, an imaginative resourcefulness in ascertaining possible solutions, a will and patience to investigate their validity and practicability, and a determination not only to take nothing for granted but to act conscientiously and courageously on his own considered judgment. This also involves an effort to inculcate in the student an appreciation of the lawyer's responsibility to his client and to society, and an understanding of the grave dangers inherent in any infringement of the ethical standards of the profession.

The following program of instruction is designed with these ends in view. The following courses are required: All first year courses, Pleading and Joinder, Equity, Evidence, Federal Income Taxation, Legal Ethics, Research Seminar, Practice and Procedure, and Practice Court. All other courses are elective. Under very exceptional circumstances, the Scholarship Committee may exempt a student from taking a required course, or may permit a student to take a first, second, or third year course in some other year. Neither fewer than 13 nor more than 16 hours may be carried without the consent of the Scholarship Committee.

DESCRIPTION OF COURSES

The following abbreviations are used in the description and schedule of courses:

A—an alternate course—not given every year.

I—a course given in the first semester.

II—a course given in the second semester.

I and II—a course given throughout the year.

PR—prerequisite.

R—required.

FIRST YEAR

100. Accounting for Lawyers. II. 2 hr. R. This course is designed for students with no previous training in accounting. It has as its objective the preparation of a young lawyer for collaboration with accountants on problems that require the work of both professions for a solution. The principles of elementary bookkeeping are considered only insofar as it is necessary to enable the student to grasp the more fundamental questions of accounting policy. The major portion of the course concerns the application of sound accounting principles to the problems of periodic determination of revenue, matching costs and revenues, inventory methods, valuation of tangible and intangible assets, depreciation and amortization, surplus and reserves, analysis of financial statements, and consolidated financial statements. Practical problems are regularly assigned for outside work. Amory and Hardy, *Materials on Accounting,* 3rd. ed. by Herwitz & Troutman.

102. Judicial Remedies. I. 2 hr. R. Introduction to civil procedure; common-law forms of action; extraordinary legal remedies; statutory remedies; abolition of the forms of action; fusion of law and equity. Casebook to be announced.

104. Contracts. I. 6 hr. R. The general principles of substantive law relating to contracts, formal and informal. The creation of simple contracts by offer and acceptance, consideration, Statute of Frauds, joint obligations, third-party beneficiary contracts, assignment of contractual rights and delegation of duties; conditions, performance and breach, excuses for nonperformance, impossibility of performance, discharge of contractural duties, and illegal contracts. Williston, *Cases on Contracts,* 6th ed., A.L.I. Restatement of Contracts.

106. Criminal Law and Procedure. I. 4 hr. R. A systematic survey of the penal law, the principles and maxims of the general part, the rules of the special part, with the elements of specific crimes against person and property. Criminal law enforcement and criminal procedure at common law, with emphasis on West Virginia practice, including pleading in criminal cases. Perkins, *Cases on Criminal Law and Procedure,* 2d ed.

110. Legal Research and Writing. II. 2 hr. R. The nature and use of law books, with training in research and exposition. Lecture, audio-visual instruction, and extension work assignments, leading the student through all steps of preparation of one actual controversy: research by all methods, evaluation of legal authorities, exposition (with emphasis on the effective use of the written word) in an office memorandum, and argumentation (with emphasis on legal reasoning) in an appellate brief. Pollack, *Fundamentals of Legal Research;* Cooper, *Effective Legal Writing.*

112-113. Property I. I and II. 6 hr. R. (a) The law of personal property to the extent that it is not covered in other courses. (b) The historical background of real property. Obtaining title to land through adverse possession. The modern land transaction which includes the statute of frauds, contract for the sale of land, marketable title, status of vendor and vendee and problems in equitable conversion, the mortgage and trust deed, the deed, delivery in escrow, description of land, covenants for title, recording acts, bona fide purchasers for value, and examination of title. Controlling the use of land through legislation and restric-

tive covenants. (c) The law of landlord and tenant which includes the creation of the landlord and tenant relations, creation and effect of express and implied covenants in leases, transfers of leasehold and reversionary estates, breach of covenants and conditions, and termination of the landlord and tenant relation. Casner and Leach, *Cases and Text on Property.*

114. Torts. II. 5 hr. R. Liability for intentional and unintentional acts. Includes assault and battery; false imprisonment; privileged acts; negligence; causation; strict liability; deceit; defamation, and invasion of rights of privacy. Seavey, Keeton and Keeton, *Law of Torts.* 1957 ed.

SECOND YEAR

200. Pleading and Joinder. II. 4 hr. R. Statement of claims; answers; replies; joinder of claims; joinder of parties; pre-trial objections to pleadings and to joinder of claims and parties. Blume and Reed, *Pleading and Joinder;* Cases and Statutes; West Virginia Rules of Civil Procedure.

202. Constitutional Law. I. 3 hr. The course aims to impart an understanding of the role of the Federal Constitution in relation to individual liberties and to the federal system and of the judicial process in operation as exemplified in constitutional decisions. The focus is on the commerce and the due process clauses almost exclusively. The materials assigned for study consist of the full text of the original reports of selected cases. Dowling, *Cases on Constitutional Law,* 6th ed., and current supplement.

204. Equity. I. 4 hr. R. This course deals with equity jurisdiction; operation and enforcement of decrees for equitable relief; specific relief against torts; specific performance of contracts, including consideration of the types of contract as to which courts will grant such relief, the extent to which the court will grant relief together with the various "equitable" defenses, such as fraud, inadequacy of consideration, laches, hardship, and lack of mutuality. Chafee and Re, *Cases on Equity,* 4th ed.

206. Federal Courts. II. 3 hr. Jurisdiction and procedure in federal courts. Federal question and diversity jurisdiction; removal jurisdiction and procedure; the law applied in federal courts; venue, process, joinder of parties and actions, and trial of actions in federal courts. McCormick and Chadbourn, *Cases on Federal Courts,* 3rd ed.

208. Income Taxation. I. 4 hr. R. The course is designed to give the student a thorough understanding of the basic application of the federal income tax system and of the administrative and judicial procedures available for the resolution of tax controversies. Gross income items; deductions; tax accounting; gains and losses from the disposition of property; taxation of the family, including trusts and marital arrangements; partnerships; corporations and security holders; corporate reorganizations and readjustments. Familiarization with the tax forms is provided by practical problems regularly assigned. Casebook to be announced. *Federal Taxation—Current Law and Practice* (Surrey and Warren: Commerce Clearing House.)

210. Moot Court. I. 2 hr. Study and training in appellate practice. Individual research and group discussion on problems in presentation of cases before appellate courts. Preparation of appellate briefs based on the records of actual cases and presentation of oral arguments before judges selected from the West Virginia Bar.

212. Property II. I and II. 5 hr. (a) Descent and distribution of property under intestacy laws. Law of advancements. Laws protecting widows and children from disinheritance. (b) The law of wills. (c) Administration of decedents' estates. (d) Time will be devoted to the type and problems of future interests arising in the construction of deeds and wills, especially gifts to classes, powers of appointment and the rule against perpetuities. Leach, *Cases and Text of the Law of Wills.* 2d ed. (1960 revision); Simes, *Cases on Future Interests,* 2d ed.

214. TRUSTS. II. 4 hr. The nature of a trust, its creation and elements; the transfer of a beneficiary's interest; the administration of trusts; the termination and modification of the trust; charitable trusts; liabilities to and liabilities of third persons; resulting and constructive trusts. Scott, *Cases on Trusts*. 4th ed.

THIRD YEAR

300. CONFLICT OF LAWS. II. 4 hr. The legal problems arising when an occurrence cuts across state or national boundaries, emphasizing questions of characterization, jurisdiction, foreign judgments, recognition and application of foreign law, in selected fields of law, including contracts, torts, property, domestic relations, administration of estates and corporations. Cheatham, Goodrich, Griswold, Reese, *Cases and Materials on Conflict of Laws*.

302. CORPORATIONS. I. 4 hr. The law of business corporations including formation of such corporations; corporate powers and their distribution between shareholders, directors, officers and agents, and the manner of exercising such powers; creation and maintenance of corporate capital; the issuance and marketing of securities, and the rights of shareholders with respect to dividends. Baker and Cary, *Cases and Materials on Corporations*, 3rd ed. Abridged.

306. ESTATE AND GIFT TAXATION. I. 2 hr. The course concerns the application of the federal transfer taxes (the gift tax and the estate tax) and the West Virginia inheritance tax. Basic application; inter vivos transfers subject to both transfer taxes; joint interests; life insurance; valuation; exemptions, exclusions and deductions; marital deductions and split gifts. Statutory materials on the West Virginia inheritance tax are explained. Casebook to be announced. *Federal Taxation—Current Law and Practice* (Surrey and Warren: Commerce Clearing House.)

308. EVIDENCE. I. 4 hr. R. This course deals with the law of evidence in trials at common law and in equity, with collateral reference to proceedings before commissions. The principal topics covered are judicial notice; burden of proof and presumptions; problems of relevancy, remoteness, undue prejudice, and the like; leading rules and principles of exclusion and selection; functions of judge and jury; a study of the materials and procedures dealing with form of testimony; perception and memory in connection with presentation of testimonial evidence; direct examination and matters incident thereto; cross-examination and matters incident thereto; redirect examination; discretion of the trial judge; competency and privilege. A considerable part of the classroom work deals with the handling of problems after the manner in which the problems would be handled in a trial court. Where the local law differs from the commonly accepted view, special attention is given to the West Virginia law. Morgan, Maguire, and Weinstein, *Cases and Materials on Evidence*, 4th ed. (1957), supplemented by required readings.

310. LEGAL ETHICS. I. 1 hr. R. The primary effort in this course is to bring to the attention of students the more prominent situations in which an attorney may be tempted to depart from standards of professional conduct, and how such a departure is regarded by the Bench and the Bar. Attention is given to the following topics: supervision and discipline of lawyers; unauthorized practice of law; advertising; fees and charges; client's confidential communications; representing conflicting interests; adverse interests of attorney and client; negligence, incompetence and mismanagement; clients' money; serving what clients by what means; relations of lawyers with judges, juries, witnesses and other lawyers; aiding unauthorized practice of law; the lawyer in private life. Students are required to read in full the *Canons of Judicial and Professional Ethics*. Trumbull, *Materials on the Lawyer's Professional Responsibility* (1957).

311. OFFICE PRACTICE. II. 1 hr. Practical problems in law office practice as distinguished from trial practice; but including law office phases of trial practice. Lectures by visiting attorneys in particular areas of practice. *Text materials selected.*

312. Practice and Procedure. I. 4 hr. R. PR: Pleading and Joinder. This course deals primarily with the fundamental procedural phases of a civil action: issuing, requisites and service of process; appearances; default procedure; continuances; the right to a jury trial and the processes by which a jury is selected; trial by the court without a jury; pre-trial conferences; right to open and close; objections; order of proof; dismissals; summary judgments; motions for directed verdicts or for judgments; instructions to juries; arguments of counsel; deliberations of the jury; verdicts; new trials; relief from judgments or orders; appellate procedure. Attention also is given to attachment, garnishment and suggestion. Special attention is given to the procedure applying to preliminary injunctions. Joiner, *Trials and Appeals;* Cases, Text, Statutes, Rules and Forms; West Virginia Rules of Civil Procedure.

314. Practice Court. II. 2 hr. R. PR: Pleading and Joinder; Practice and Procedure. Students view motion pictures or are given statements of facts which provide information similar to that furnished by clients and witnesses to counsel. Having interviewed these students, counsel for plaintiffs are expected to select proper remedies and counsel for defendants are expected to interpose appropriate defenses. The court is called The University Court and performs the functions of a circuit court of the state. For purposes of venue, it may function as The University Court of any county in the state. Cases are litigated, from the filing of the complaint and the issuance of process to final judgment or decree, as in actual practice. The presiding judges are judges of the various circuit courts and of the Supreme Court of Appeals of the state. Members of the class impersonate litigants and witnesses and serve as officers of the court.

316. Research Seminar. II. 2 hr. R. Each third year student is required to take at least one of the seminars offered each year. Enrollment will be limited so as to provide approximately the same number of students in each seminar. In so far as possible, however, assignment to the seminars will be in accordance with the preferences indicated by the students. The following seminars are offered: Estate Planning, Evidence, Land Transactions, and Procedure.

SECOND OR THIRD YEAR

250. Administrative Law. II. 3 hr. A comprehensive outline of agency procedures rather than intensive study of any particular agency. Attention is directed primarily though not exclusively to federal agencies. The administrative process itself, including the operation of the Administrative Procedure Act, receives primary emphasis in an effort to qualify students for effective client representation in dealing with the agencies. Judicial and other outside controls of agency action are studied and the extent to which constitutional limitations apply is touched on. Davis, *Administrative Law Cases* (1959).

252. Business Associations. I. 3 hr. A. This course covers the various types of business associations other than corporations. Conduct of business by agents, including the employment relation and workmen's compensation, is considered in some detail. Also considered are joint ventures, partnerships, unincorporated associations, joint stock associations, and business trusts. Steffen, *Cases on Agency.*

254. Coal, Oil and Gas. II. 3 hr. A. Nature of ownership of these subsurface minerals; methods of transferring the ownership thereof; exploitation by means of leases; protection from damage against wrongful taking thereof; partition among co-owners; analysis of leasehold estates, the habendum clause, the drilling clause, lessee's duty of development, assignment of leases and transfers of the reversion; rents and royalties; tort liabilities in connection with operation; coal mining rights and privileges. Summers, *Cases on Oil and Gas.*

256. Creditor's Rights. I. 3 hr. A. Procedures for enforcing the rights of creditors. Individual procedures (execution, garnishment, suggestion and creditors' bills); fraud on creditors; collective procedures (general assignments, creditors' agreements, and bankruptcy). Hanna and MacLachlan, *Cases on Creditors' Rights,* 5th ed., also Hanna and MacLachan, *Bankruptcy Manual,* 5th ed.

258. Damages. I. 2 hr. The course deals with the rules and principles of law applicable to the determination of the sum of money to be awarded to the plaintiff in a legal action brought to recover for the loss suffered by him as a result of some violation of his legal rights caused by the defendant. One-third of the course is allotted to the study of the rules and standards applicable generally, such as determination of value, requirement of certainty, recovery of interest and expenses of litigation, the doctrine of avoidable consequences, and credit for benefit accompanying injury. The next one-third deals with damages in tort actions and considers exemplary damages, injuries to the person, defamation and business disparagement, deceit, and injuries to the interests of owners of personal property and to the interests of landowners. The final one-third is devoted to a study of the rules and measures of damages for breach of contract. McCormick and Fritz, *Cases and Materials on Damages,* 2d. ed.

260. Domestic Relations. II. 2 hr. The law in its relation to creation, stability and breakdown of domestic relations, including engagement, marriage, annulment, separation, divorce, alimony and support, custody, legitimacy and adoption. Compton, *Cases on Domestic Relations.*

262. Insurance. II. 2 hr. A. This course concentrates on the special problems and documents which revolve about the insurance contract in the fields of marine, life, fire, accident, disability and liability insurance. Among these problems are definition of the risk, definition of the persons insured, defenses, measurement of losses, extent of underwriter's liability, subrogation, contribution between underwriters, and determination of insurance rates. Vance's *Cases on Insurance,* 4th ed. by Fegan (1952).

264. Labor Law. II. 3 hr. A. Legality of labor objectives and of methods used to gain those objectives, such as strikes, picketing, and boycotts; organization and operation of labor unions; the labor injunction, including the effect of legislation thereon; collective bargaining, the law and contracts resulting therefrom; employer and union unfair labor practices; arbitration, mediation and conciliation. Handler & Hayes, *Cases on Labor Law,* 3rd ed.

266. Legislation. I. 2 hr. A. A survey of the legislative process; relation of the legislative to the judicial and executive branches; legislation and common law rules; legislative procedure; elements of statutory interpretation; fact and policy determination of the legislative process; legislative drafting. Casebook to be announced.

268. Local Government Law. I. 2 hr. A. Nature and function of local government, counties, cities, towns and villages, as well as permanent and *ad hoc* agencies and districts. Creation, annexation, dissolution, rights and duties (zoning, appropriation of funds and contracts), powers and liabilities (contract and tort), personnel, municipal finance (debt limitation and special assessment). Casebook to be announced.

270. Negotiable Instruments. I. 3 hr. The law dealing with bills, notes, and checks is examined in conjunction with that concerning the relationship of banks with depositors and with other banks. The course aims to explain how our commercial credit arrangements operate and how claims based on such arrangements are created and protected. Aigler, *Bills and Notes,* 2d ed.

272. Sales. II. 3 hr. A. The course deals with the law respecting the transfer of goods for a price, characteristic security arrangements incident to such transfers, and the rights, liabilities, and remedies arising out of such transfers. The common law, the Uniform Conditional Sales Act, and other statutes of a kind in force in West Virginia are stressed, although attention is also given to provisions of the Uniform Sales Act and relevant portions of the proposed Commercial Code. Casebook to be announced.

274. Suretyship. II. 2 hr. A. This course is devoted to the discussion of the general principles of surety and guaranty. Special attention is given to the applicable section of the Statute of Frauds; the surety's rights before and after payment; the surety's defenses including the use of set-off and counterclaim, alteration and discharge. Simpson, *Cases on Suretyship.*

280. Legal Research. 1 or 2 hr. as needed.

SCHEDULE OF COURSES 1962-63[1]

Casebooks and other materials to be used in the courses are indicated under *Description of Courses.*

FIRST YEAR

100. Accounting for Lawyers. II. 2 hr. R.	Mr. Collins
102. Judicial Remedies. I. 2 hr. R.	Mr. Lugar
104. Contracts. I. 6 hr. R.	Mr. Donley
106. Criminal Law and Procedure. I. 4 hr. R.	Mr. Lorensen
110. Legal Research and Writing. II. 2 hr. R.	Mr. Dadisman
112-113. Property I. I and II. 6 hr. R.	Mr. Brown
114. Torts. II. 5 hr. R.	Mr. Morris

SECOND YEAR

200. Pleading and Joinder. II. 4 hr. R.	Mr. Lugar
202. Constitutional Law. I. 3 hr.	Mr. Dadisman
204. Equity. I. 4 hr. R.	Mr. Morris
206. Federal Courts. II. 3 hr.	Mr. Lorensen
208. Income Taxation. I. 4 hr. R.	Mr. Collins
210. Moot Court. I. 2 hr.	Mr. Lugar
212. Property II. I and II. 5 hr.	Mr. Brown
214. Trusts. II. 4 hr.	Mr. Colson

THIRD YEAR

300. Conflict of Laws. II. 4 hr.	Mr. Collins
302. Corporations. I. 4 hr.	Mr. Colson
306. Estate and Gift Taxation. I. 2 hr.	Mr. Collins
308. Evidence. I. 4 hr. R.	Mr. Dadisman
310. Legal Ethics. I. 1 hr. R.	Mr. Dadisman
311. Office Practice. II. 1 hr.	Mr. Dadisman
312. Practice and Procedure. I. 4 hr. R.	Mr. Lugar
314. Practice Court. II. 2 hr. R.	Mr. Lugar

[1]The schedule of courses as given here is subject to change.

316. Research Seminar. II. 2 hr. R.

Estate Planning	Mr. Collins
Evidence	Mr. Dadisman
Land Transactions	Mr. Brown
Procedure	Mr. Lugar

SECOND OR THIRD YEAR

250. Administrative Law. II. 3 hr.	Mr. Dadisman
252. Business Associations. I. 3 hr. A.	Mr. Brown
254. Coal, Oil and Gas. II. 3 hr. A.	Mr. Donley
258. Damages. I. 2 hr.	Mr. Collins
260. Domestic Relations. II. 2 hr.	Mr. Morris
268. Local Government Law. I. 2 hr. A.	Mr. Lorensen
270. Negotiable Instruments. I. 3 hr.	Mr. Morris
272. Sales. II. 3 hr. A.	Mr. Lorensen
274. Suretyship. II. 2 hr. A	Mr. Morris

West Virginia University Medical Center

HISTORICAL STATEMENT

The West Virginia University Medical Center has been conceived, planned, and built for the primary purpose of providing the best possible facilities for the education of students in dentistry, medicine, nursing, pharmacy, and technologists in the health fields.

The Basic Sciences Building was first opened for instructional purposes in September, 1957.

The School of Dentistry was established by an act of the West Virginia Legislature on March 9, 1951. The first appointment made was that of a consultant to the technical staff for the planning of the Medical Center. On May 1, 1953, the consultant was appointed Dean of the School of Dentistry. The first class of dental students began its studies in September, 1957, and was graduated on June 5, 1961. The twenty-three members of that class were the recipients of the first dental degrees ever awarded in the State. At the present time, more than one hundred students are enrolled in the full four-year accredited dental program. In September, 1961, the first students were enrolled in the school's degree program in dental hygiene.

The School of Medicine, which had been offering a two-year program since 1912, moved from the Main Campus to the Medical Center in 1957. In September, 1960, the two-year program was changed to a four-year program. This coincided with the opening of the new 522-bed University Hospital.

The School of Nursing registered its first class of twenty-eight students in the fall of 1960. The nursing program is a four-year program and admits qualified students directly from high school.

Pharmacy was first offered at the University as a department in the School of Medicine, beginning in 1914. The Department of Pharmacy was changed to the College of Pharmacy in 1936. The name was changed from College of Pharmacy to School of Pharmacy in 1958 when the program was moved from the Main Campus to the Medical Center. In September, 1960, the School changed from a four-year to a five-year program including two years of Pre-Pharmacy.

EDUCATIONAL FACILITIES

LIBRARY

The Medical Center Library serves the students, faculty, and staff of the four schools and the University Hospital. In addition, its services are available to the health professions throughout the State, and will serve the general public where needed.

The Library is located on the second floor of the west wing of the Basic Sciences Building and contains 28,000 square feet of space. It is designed to seat 300 people and to hold up to 140,000 volumes in its six stack levels.

There are approximately 52,000 bound volumes now on the shelves. Currently received are more than 1,000 domestic and foreign periodical titles.

The Medical Center Library and the University Library maintain an active interlibrary loan service. Material not owned by either library may be borrowed through loans from libraries in other cities.

The Library is open except on holidays from 8:00 A.M. to 5:30 P.M., Monday through Friday; from 9:00 A.M. to 1:00 P.M. on Saturdays; and from 1:00 P.M. to 5:00 P.M. on Sundays. It is also open evenings during the week, Monday through Friday. During the Summer Session the weekday hours are from 8:00 A.M. to 5:00 P.M. Changes in scheduled hours are posted in advance.

CLASS ROOMS AND LABORATORIES

All activities within the Center are directly or indirectly related to the teaching program. Each School and Department has planned and provided adequate teaching

space. Laboratories are designed so that all necessary laboratory equipment can be brought to the student. Experiments and teaching procedures can be conducted efficiently.

AUDITORIUM

The auditorium seats five hundred persons and is used for meetings, seminars, conferences, and sessions with combined classes of students. The stage is used for clinical conferences or for programs requiring group participation.

TELEVISION

The Basic Sciences Building has a conduit system for future closed-circuit color television. The Auditorium is one of the main points of origin for such programs. However, programs can originate from certain laboratories as well as from the University Hospital. Receivers can be placed in all laboratories and lecture rooms so that programs can be viewed by students throughout the building.

DENTAL CLINICS

Clinical training and experience constitute a major part of the curriculum for junior and senior dental students. The facilities provided for undergraduate dental students, graduate dental students, and dental hygiene students include one hundred fifty work stations and all the necessary related laboratories. Patients are accepted for treatment if their dental problems are of teaching value and if a student is available for assignment. The student assigned to each case must work under the close supervision of a faculty member. The clinic program not only provides practical experience for the student but also renders a much-needed service to several hundred patients annually.

UNIVERSITY HOSPITAL AND OUT-PATIENT CLINICS

The West Virginia University Hospital and its out-patient clinics opened in the summer of 1960 as integral units of the Medical Center. The Hospital will accommodate 522 patients and the clinics will provide for up to 500 out-patient visits per day.

All recognized medical specialist services are provided through the staff of the respective clinical departments of the School of Medicine. Facilities and staff are available for clinical laboratory service, diagnostic and therapeutic X-ray services and such special examinations as electrocardiography, cardiac catheterization, and electroencephalography. Emergency facilities are available at all times.

The Hospital and clinics constitute the main teaching laboratory for clinical students in medicine and nursing, and function also in the education and training of interns, resident physicians, and post-graduate practitioners of the various healing arts.

ADMISSION REGULATIONS

West Virginia University does not limit its applicants to residents of the State; however, priority will be given to West Virginia residents who meet specified requirements. Preference will be given to those applicants who have the higher scholastic records; who make the better scores on the admissions tests; who present official recommendations on forms supplied by the Assistant Registrar, Medical Center; and who in all other respects, give promise of doing satisfactory work as students and as professional persons.

Careful consideration is given to those personal qualifications which have a bearing upon fitness of the applicant for the study and practice of the profession of his choice.

Applicants for admission to any of the schools at the Medical Center should write to the Assistant Registrar, Medical Center, West Virginia University, who will furnish official blanks upon which formal application must be made.

FEES AND EXPENSES

See the 1962-63 *Announcements* of the Medical Center for information concerning fees for the Schools in the Medical Center.

SUSPENSIONS

In view of public and professional responsibilities the faculty of each of the professional schools of West Virginia University shall have the authority to drop any student from its rolls whenever, by formal decision reduced to writing, the faculty finds that the student is unfit to meet the qualifications and responsibilities of the profession.

The Basic Sciences

The Departments of Biochemistry, Gross and Neurological Anatomy, Microbiology, Microanatomy and Organology, Pathology, Pharmacology, and Physiology are grouped together because they offer courses, both required and elective, to students in each of the various Schools in the Medical Center.

Several of these Departments also have Master's and Ph.D. degree programs. Students interested in working for such an advanced degree or taking graduate courses should contact the Chairman of the Department and consult the Graduate School *Announcements* for further details.

Graduate students must obtain permission from the instructor before enrolling in Medical Center courses.

COURSES OF INSTRUCTION

GROSS AND NEUROLOGICAL ANATOMY

Professor JOHNSON; Associate Professors BOYER and HEWES; Assistant Professor GOODGE; Clinical Assistant Professors SHAFFER and SMITH; Instructor GAUGER.

101. PRINCIPLES OF HUMAN ANATOMY. I. 3 hr. PR: Consent. Lectures and demonstrations on the anatomy of the human body, with particular attention to morphological concepts. Designed for students in the paramedical sciences.

201. GROSS ANATOMY. (For Medical Students, First Year). I and II. 6 hr. per semester, total of 12 hr. PR: Gen. Zool. and consent. A detailed study of the human body with a complete dissection.

203. NEUROANATOMY. (For Medical Students, First Year). II. 5 hr. PR: Consent. A gross and microscopic study of the central nervous system.

206. GROSS ANATOMY. (For Dental Students). I and II. 4 hr. per sem., total of 8 hr. PR: Gen. Zool. and consent. A study of the human body including dissection.

208. NEUROANATOMY. (For Dental Students). II. 2 hr. PR: Consent. A gross and microscopic study of the central nervous system.

301. ADVANCED GROSS ANATOMY. I, II, S. 2-6 hr. per sem. with a total of 36 hr. available. PR: Anat. 201 and consent. A morphological and functional analysis of a selected region. With dissection.

302. ADVANCED DEVELOPMENTAL ANATOMY. I, II, S. 2-6 hr. per sem. with a total of 18 hr. available. PR: Anat. 201 and consent. Detailed developmental anatomy of the fetal period and childhood. With dissections and analysis of variations and malformations.

303. Seminar. I, II, S. 1-6 PR: Consent. Selected areas of study including historical aspects.

304. Applied Anatomy. I, II. 2-6 hr. per sem. with a total of 36 hr. available. PR: Anat. 201 and consent. A regional study primarily intended for physicians and surgeons.

350. Research in Gross and Neurological Anatomy. I, II, S. 1-6 hr. PR: Anat. 201, 203 and consent.

MICROANATOMY AND ORGANOLOGY

Professor Williams; Associate Professors Higginbotham and Reyer.

205. Microanatomy and Organology. (For Medical Students, First Year). I. 6 hr. PR: Gen Zool. or equiv. Structure, function and embryology and tissues and organs.

209. Microanatomy and Organology. (For Dental Students). I. 6 hr. PR: Gen. Zool. Structure, function and embryology of tissues and organs with emphasis on teeth and supporting structures.

305. Experimental Embryology. II. 3 hr. PR: Embryology, Microanat. 205 or 209 and consent. An analysis of development, differentiation and regeneration.

351. Advanced Microanatomy and Organology. I, II, S. 2 hr. PR: Microanat. 205 or 209. Required of all graduate students in this department.

352. Research in Microanatomy and Organology. I, II, S. 2-12 hr. PR: Microanat. 351 and consent.

353. Special Problems in Microanatomy. II. 2-4 hr. PR: Microanat. 205 or 209 and consent. For students other than candidates for a graduate degree in Microanatomy.

BIOCHEMISTRY

Professor Krause; Associate Professors Lotspeich, Shelton, and Burke; Assistant Professors Gangloff, Canady, and Connelly; Instructor (part-time) Nelson.

139. General Biochemistry. (For students in Home Economics, Medical Technology, and Pharmacy). I. 4 hr. PR: Inorganic and Organic Chem. Quantitative analysis desirable. Open to other qualified students.

223. Biochemistry. (For Dental Students). II. 7 hr. PR: Organic Chem. A study of the chemical and physiochemical processes which take place in the human body.

231. Biochemistry. (For Medical Students, First Year). I. 8 hr. PR: Organic Chem. Content similar to Biochem. 223.

237. Seminar in Biochemistry. I, II. 1-6 hr. (1 hr. per sem.) PR or Conc: Biochem. 223 or 231. Presentation and discussion of special topics.

239. Clinical Chemical Techniques. (Primarily for Medical Technology students). II. 4 hr. PR: Biochem. 139, 223, or 231. Open to other qualified students.

330. Biochemical Preparations. I, II. 2-5 hr. PR: Biochem. 223 or 231 or equiv. Emphasis on biochemical methods.

332. Enzyme Kinetics. II. 3 hr. PR: Biochem. 139, 223, or 231. For graduate students or other properly qualified students. An introduction to the physical mechanisms of enzyme action.

333. Research in Biochemistry. I, II, S. 1-6 hr. PR: Biochem. 231 or equiv.

334. Special Topics. I, II, S. 1-6 hr. PR: Consent.

337. Biochemistry of the Amino Acids and Proteins. I. 3 hr. PR: Agr. Biochem. 290 or Med. Biochem. 231. Offered in 1962-63 and every third year.

338. Hormones, Nature and Action. I. 2 hr. PR: Agr. Biochem. 290 or Med. Biochem. 231. Offered in 1964-65 and every third year.

MICROBIOLOGY

Professor Slack; Assistant Professors Burrell, Deal, Dyson, Gerencser, Hall, and Mascoli.

26. Microbiology. II. 3 hr. (Primarily for Nursing students). A study of pathogenic microorganisms.

220. Pathogenic Microbiology. (For Pharmacy Students). II, S. 5 hr. PR or Conc: Chem. 238 (organic). A detailed study of pathogenic microorganisms.

221. Microbiology. (For Medical Students, Second Year). I. 7 hr. PR or Conc: Organic Chem.; Biochem. desirable. A detailed study of pathogenic microorganisms.

222. Parasitology. (For Medical Students, Second Year). II. 2 hr. PR: Consent. Introduction to animal organisms as human pathogens and vectors of disease.

223. Pathogenic Microbiology. (For Medical Technology Students). II. 5 hr. PR or Conc: Organic Chem. A detailed study of pathogenic microorganisms.

224. Parasitology. (For Medical Technology Students). II. 4 hr. PR: Consent. Study of animal parasites and vectors of disease.

225. Microbiology. (For Dental Students). I. 5 hr. PR: Biochem. A detailed study of pathogenic microorganisms.

226. Basic Microbiology. I. 4 hr. PR: Consent. A detailed review of the major groups of microorganisms including morphology and physiology. Primarily for graduate students.

227. Special Problems in Microbiology. I, II, S. 1-6 hr. PR: Microbiol. 221 or equiv.

228. Diagnostic or Determinative Microbiology. I, II, S. 1-6 hr. PR: Microbiol. 221 or equiv. Diagnostic procedures as aids to diagnosis of human diseases and methods for the identification of microorganisms.

321. Bacterial Physiology. I. 4 hr. PR or Conc: Microbiol. 221 or equiv. and Biochem. Physiological studies on bacteria including nutrition, metabolic pathways growth and death.

322. Microbial Genetics and Cytology. II. 4 hr. PR: Microbiol. 221 or equiv. Principles of microbial genetics and advanced cytological techniques.

323. Immunology. II. 4 hr. PR: Microbiol. 221 or equiv. A thorough study of antigens, antibodies, and their reactions both *in vitro* and *in vivo* and including the hypersensitivity phenomenon.

324. Virology. II. 4 hr. PR: Microbiol. 221 or equiv. A study of human, animal, and bacterial viruses.

325. Medical Mycology. I. 3 hr. PR: Microbiol. 221 or equiv. Mycology 203 and 330 are recommended. A study of the fungi which infect humans with the emphasis on isolation and identification.

326. Seminar. I, II, S. 1-6 hr. PR: Microbiol. 221 or equiv. This will include the history of microbiology.

327. Research in Microbiology. I, II, S. 1-6 hr. PR: Microbiol. 221 or equiv.

PATHOLOGY

Professor Albrink; Associate Professors Kelln and Stuart; Assistant Professors Conn and Fink; Instructors Chamberlain and Napoli; Clinical Assistant Professors Laqueur and Tolstoi.

228. Pathology. (For Dental Students). II. 4 hr. PR: Microscopic Anat. 209. A study of disease processes with emphasis upon fundamentals.

251. General Pathology I. (For Medical Students, Second Year). I. 10 hr. PR: Consent. Includes gross and microscopic studies with demonstrations.
(Note: Appropriate material in Clinical Pathology is integrated in Path. 251 and 252).

252. General Pathology II. (For Medical Students, Second Year). II. 8 hr. PR: Consent. Includes gross and microscopic studies and materials in clinical pathology.

253. Oral Pathology. (For Dental Students). I. 8 hr. PR: Path. 251. A study of the etiology of the diseases of the teeth and their investing structures.

256. Advanced Pathology. I, II. 3 hr. PR: Consent, Path. 228 or 251. Microscopic and gross specimens from selected autopsies.

351. Research. I, II. 1-6 hr. PR: Consent.

PHARMACOLOGY

Professor Watts; Associate Professors Kenny and Saxe; Assistant Professors Fleming and Robinson; Instructor Holroyd.

60. Pharmacology. II. 3 hr. (Primarily for Nursing Students). Physiology, chemistry, pharmacodynamics, toxiology, and therapeutic use of drugs as used in nursing practice.

260. Pharmacology. (For Dental Students). I. 5 hr. PR: Physiology. Chemistry, pharmacodynamics, toxicology, and therapeutic use of drugs.

261. Fundamentals of Pharmacology. (For Pharmacy Students). I. 5 hr. PR: Physiology. Classification, pharmacodynamics and toxicology of therapeutic agents.

262. Pharmacology. (For Medical Students, Second Year). II. 6 hr. PR: Physiology. Chemistry, pharmacodynamics, toxicology and therapeutic use of drugs.

265. Seminar in Pharmacology. I, II. 1 hr. per semester. PR or Conc: Pharmacol. 262 or graduate status in basic medical sciences.

360. Special Topics in Pharmacology. I, II, S. 1-6 hr. per sem. Assigned study in pharmacodynamics, autonomic and cardiovascular pharmacology, chemotherapy, bioassay and the biochemistry of drug action.

362. Advanced Pharmacology. I, II, S. 1-6 hr. per sem. PR: Pharmacol. 262 or equiv. Lectures and laboratory study in advanced phases of pharmacology; development of research techniques.

367. Research in Pharmacology. I, II, S. 1-6 hr. per semester. PR: Pharmacol. 262 or equiv.

PHYSIOLOGY

Professors Northup, Penrod, Stickney, and Van Liere; Associate Professor Lindsay; Assistant Professors Blount and Gladfelter.

101. Principles of Human Physiology. I. 3 hr. (For Nursing Students). Normal functions of the human organism. Lecture, demonstration and laboratory.

141. Elementary Physiology. I. 4 hr. (For students in Pharmacy and Medical Technology). PR: Biol. 1, 2, or Zool. 1, 2; PR: or conc: Chem. 131 (organic chem.).

241. Human Physiology. (For Medical Students, First Year). II. 9 hr. PR: Comparative Anat., Biochem. 231. A study of the functions of organs.

243. Human Physiology. (For Dental Students). I. 6 hr. PR: General Zool., Organic Chem. Normal functions of the body with emphasis on aspects pertaining to dentistry.

244. Seminar in Physiology. I, II. 1-6 hr. (1 hr. per sem.). PR: Graduate status.

340. Special Topics. I, II, S. 1-12 hr.

342. Advanced Physiology. I, II, S. 1-6 hr. per sem. PR: Physiol. 241 or 243 or equiv. Historical review, discussion of latest developments.

346. Research in Physiology. I, II, S. 1-12 hr.

The School of Dentistry

GENERAL INFORMATION

ADMINISTRATION

Administration within the School of Dentistry is the responsibility of the Dean, who is assisted in this function by the Faculty Council of the School of Dentistry. The Council is made up of those full professors who are also chairmen of their respective departments and divisions which are involved in the teaching of dental students. Its general purpose is to serve in an advisory capacity to the Dean in carrying out the established policies of the School of Dentistry and of the University.

ADMISSION

See page 74 for Admission information for the School of Dentistry, and see also the *Announcements* of the Medical Center.

CURRICULUM

The School of Dentistry of West Virginia University offers an undergraduate program of education consisting of four academic years. The requirements for admission (see page 74) and the curriculum conform to standards established by the national accrediting agency for dental education, the Council on Dental Education of the American Dental Association. These standards also are generally accepted by the American Association of Dental Schools. Students are required to take all courses listed for each semester of each year in the Curriculum Plan on pages 22-23. They must complete each course satisfactorily in order to enroll for the courses in the succeeding year.

At the present time, only the degree of Doctor of Dental Surgery is offered by the School of Dentistry. However, it is possible to earn advanced degrees granted by West Virginia University in certain basic sciences which are closely related to dentistry. A program leading to the Master of Science degree is available in the field of gross and neurological anatomy and in the field of microanatomy and organology. Programs leading to the Master of Science and the Doctor of Philosophy degrees are available in biochemistry, microbiology, pharmacology, and physiology. Detailed information concerning admission requirements, courses of study, etc., in the various graduate programs may be obtained from the office of the Dean.

While graduate programs leading to advanced degrees in the dental sciences remain in the planning stage, the School of Dentistry is active in continuing education on a non-degree basis. Dental internships are available, and many post-graduate refresher courses are offered throughout the year.

REQUIREMENTS FOR THE DEGREE

A candidate for graduation may be recommended by the faculty of the School of Dentistry to the Board of Governors for its approval and for the conferring of the degree of Doctor of Dental Surgery, provided he meets fully the following conditions:

1. He shall have been in regular attendance in the School of Dentistry for the full four years, or, upon transfer, for the last two years of the course.

2. He shall have completed the prescribed requirements for each of the four years.

3. He shall have shown during his time in the School of Dentistry that he is of good moral character and shall have demonstrated a sense of professional responsibility in the performance of his assignments as a student.

4. He shall have met in full all financial obligations to the University.

5. He shall present himself at the time and place designated for the conferring of the degree.

BACHELOR OF ARTS IN PRE-DENTISTRY

The College of Arts and Sciences of West Virginia University offers a Bachelor of Arts degree in Pre-Dentistry to qualified students who successfully complete a special predental curriculum and one full year of instruction in an accredited school of dentistry. Complete details of the program will be found in the *Announcements* of the College of Arts and Sciences.

CURRICULUM PLAN

Clock Hours

FRESHMAN CLASS	1st Semester		2nd Semester		Year Totals			Credit
	Lect.	*Lab.*	*Lect.*	*Lab.*	*Lect.*	*Lab.*	*Clinic*	*Hours*
209 Microanatomy	48	144			48	144		6
210 Dental Anatomy	16	96			16	96		3
212 Dental Materials	16	96			16	96		3
206 Gross Anatomy	32	96	32	96	64	192		8
208 Neuroanatomy			16	64	16	64		2
223 Biochemistry			80	96	80	96		7
213 Prosthodontics			16	96	16	96		3
211 Comp. Dental Anatomy			16	16	16	16		1
TOTALS	112	432	160	368	272	800		33

		1st Semester		2nd Semester		Year Totals			Credit
		Lect.	Lab.	Lect.	Lab.	Lect.	Lab.	Clinic	Hours
SOPHOMORE CLASS									
225	Microbiology	32	128			32	128		5
243	Physiology	64	80			64	80		6
229	Operative Dentistry	16	96	8	48	24	144		5
234	Prosthodontics		48	16	96	16	144		4
236	Crown and Bridge Dent.	16	96	16	96	32	192		6
228	Pathology			32	96	32	96		4
233	Pedodontics*			8	48	8	48		1
240	Periodontics*			8	24	8	24		1
242	Endodontics*			8	24	8	24		1
239	Anesthesiology			16		16			1
245	Orthodontics			16		16			1
226	Oral & Written Communication			32		32			2
	TOTALS	128	448	160	432	288	880		37
JUNIOR CLASS									
253	Oral Pathology	32	48			32	48		3
260	Pharmacology	64	48			64	48		5
255	Endodontics	8		8		16		30	2
264	Oral Diagnosis	16		16		32		28	2
258	Operative Dentistry	16		16		32		150	4
267	Oral Roentgenology	16	16			16	16	28	2
259	Oral Surgery	16		16		32		56	3
261	Pedodontics	16				16		40	2
263	Periodontics	8		8		16		30	2
268	Principles of Medicine			32		32			2
250	Prosthodontics	16	32	16		32	32	85	4
257	Crown and Bridge Dent.	16		16		16		75	2
265	Orthodontics			16		16		20	1
270	Ceramic Technics			16	48	16	48		2
	TOTALS	224	144	160	48	368	192	542**	36
SENIOR CLASS									
279	Physical Diagnosis	16				16			1
294	Practice Administration	16				16			1
280	Endodontics							50	1
283	Operative Dentistry	16				16		250	5
287	Oral Diagnosis							42	1
284	Oral Surgery	16		16		32		84	4
285	Orthodontics			16		16		40	2
286	Pedodontics							80	2
276	Prosthodontics	16				16		150	4
277	Periodontics	16				16		50	2
289	Crown and Bridge Dent.	16				16		150	4
295	Jurisprudence	16				16			1
296	Oral Roentgenology							42	1
290	Ethics			16		16			1
291	History of Dentistry			16		16			1
288	Principles of Medicine			16		16			1
297	Public Health Dentistry			16		16			1
299	Research in Dentistry								3
	TOTALS	128		96		224		938**	36

*Class meets for eight weeks.
**Allocation of clinic time is estimated on a yearly basis.

COURSES OF INSTRUCTION

Each course in the School of Dentistry is designated by the name of the department offering it, its number and title, number of credit hours, and the semester in which it is offered. Courses numbered 200-224 are for freshmen, 225-249 for sophomores, 250-274 for juniors, and 275-299 for seniors.

For a description of the Basic Sciences courses which are a part of the dental curriculum, see pages 363-367.

CROWN AND BRIDGE DENTISTRY

Professor ADAMS; Assistant Professor MAZUR; Instructor T. J. MARTIN.

236. CROWN AND BRIDGE TECHNICS. Yr. 6 hr. Lectures and laboratory exercises on the principles and technics of crown and bridge prosthodontics.

257. CLINICAL CROWN AND BRIDGE DENTISTRY. Yr. 2 hr. Procedures employed in clinical practice, including a study of the indications and contra-indications of various types of fixed restorations.

270. CERAMIC TECHNICS. II. 2 hr. Lectures and laboratory exercises in the application of fused porcelain and acrylic resins in crown and bridge prostheses.

289. CLINICAL CROWN AND BRIDGE DENTISTRY. Yr. 4 hr. Problems in clinical practice of crown and bridge prosthodontics, especially in the design and construction of the more complex restorative appliances.

DENTAL ANATOMY

Assistant Professor H. H. BOYERS; Instructor DEMPSEY.

210. DENTAL ANATOMY. I. 3 hr. Lectures and laboratory projects in the form and function of the human dentition throughout life; the relation of the teeth to one another and to surrounding structures.

211. COMPARATIVE DENTAL ANATOMY. II. 1 hr. The evolutionary development of the human dentition based on a comparative study of the teeth and jaws of the vertebrates.

DENTAL MATERIALS

Assistant Professor OVERBERGER.

212. DENTAL MATERIALS. I. 3 hr. A study of the sources, the methods of manufacture, the physical and chemical properties and the manipulation of restorative materials used in dentistry.

ENDODONTICS

Professor BIDDINGTON.

242. ENDODONTIC TECHNICS. II. 1 hr. Lectures and laboratory exercises to prepare the student to treat the various problems related to the dental pulp and the periapical tissues.

255. CLINICAL ENDODONTICS. Yr. 2 hr. Lectures on the etiology, diagnosis, treatment planning, treatment, and prognosis of the diseases of the dental pulp and their sequelae. Application of basic endodontic principles and preclinical sciences is stressed in performing clinical therapy.

280. CLINICAL ENDODONTICS. Yr. 1 hr. A clinical course in the diagnosis and treatment of the more advanced endodontic problems.

MEDICINE

Professor Flink and Staff.

268. Principles of Medicine. II. 2 hr. A study of those diseases that are included in the practice of internal medicine about which the dentist should have sufficient knowledge for intelligent cooperation with the physician in rendering an effective total service to the patient.

279. Physical Diagnosis. I. 1 hr. To acquaint the student with procedures to be followed in making a thorough diagnosis; to instruct him in symptomatology of the more common general diseases, particularly those that may be dentally connected; and to instruct him in outlining an indicated treatment.

288. Principles of Medicine. II. 1 hr. A further study of general diseases about which the dental student should have intelligent working knowledge. As a part of the course requirement, students are assigned to the hospital in groups where the teacher schedules clinical demonstrations and leads the students on ward rounds for the purpose of observing conditions that have been described in class.

OPERATIVE DENTISTRY

Professors Randolph and Sausen; Assistant Professors H. H. Boyers and Chastain; Instructor Wilson.

229. Operative Technics. Yr. 5 hr. A preclinical course in the nomenclature of operative dentistry, principles of cavity preparation, manipulation of restorative materials, and related instrumentation.

258. Clinical Operative Dentistry. Yr. 4 hr. A study of the diseases and abnormalities of the hard tissues of the teeth, the technical procedures followed and the materials used in the treatment of these conditions, and biological reactions of the tissues. Introduction to clinical practice, with emphasis on treatment planning.

283. Clinical Operative Dentistry. Yr. 5 hr. A further development of operative procedures taught in Oper. Dent. 229 and 258, extended to include emphasis on complex cases and with attention to the improvement of efficiency and finesse in operating.

ORAL DIAGNOSIS

Associate Professors Graham and Kelln; Assistant Professor Phillips; Instructor Brown.

264. Oral Diagnosis. Yr. 2 hr. Lectures and clinical demonstrations designed to teach the methodical recognition of oral problems. The fundamental principles and procedures of oral diagnosis are stressed in the lectures, while their practical application is emphasized in the clinic.

287. Clinical Oral Diagnosis. Yr. 1 hr. Further clinical application of principles presented in Oral Diag. 264, extended to include special problem presentations which provide opportunities for independent observation and analysis.

ORAL ROENTGENOLOGY

Associate Professors Graham and Kelln; Assistant Professor Phillips; Instructor Brown.

267. Oral Roentgenology. Yr. 2 hr. The theory and practice of the use of roentgen rays as an aid to oral diagnosis.

296. Clinical Oral Roentgenology. I. 1 hr. Further clinical experience in oral roentgenology through the periodic assignment of students in the department.

ORAL SURGERY

Professor Campbell; Assistant Professors Davidson and Welch; Instructors Bird and Comley.

239. Anesthesiology. II. 1 hr. Lectures on local and general anesthesia, a discussion of the several agents that are used to produce both types of anesthesia, and the indications and contra-indications for their use.

259. Oral Surgery. Yr. 3 hr. A course of instruction in all aspects of the surgical removal of teeth.

284. Clinical Oral Surgery. Yr. 4 hr. Lectures, demonstrations, and clinical practice in exodontia and the surgical treatment of teeth, jaws, and associated structures. University Hospital will be used to familiarize the student with the duties of the oral surgeon in the treatment of hospitalized patients.

ORTHODONTICS

Professor Sassouni; Instructor H. Martin.

245. Orthodontic Technics. II. 1 hr. Classification of types of malocclusion and technical instruction in the construction of orthodontic appliances.

265. Clinical Orthodontics. II. 1 hr. Dento-facial typing; growth and development of the face; dental age: tooth formation and eruption; heredity; diagnosis, treatment planning, and clinical treatment.

285. Clinical Orthodontics. Yr. 2 hr. Seminars, case presentations, and clinical practice in treatment of malocclusion, adjunctive treatment, and problems of retention.

PEDODONTICS

Professor Poleway.

233. Pedodontic Technics. II. 1 hr. A study of the principles involved in the treatment of diseased or damaged teeth of children. Appliance technics useful in children's dentistry are included.

261. Clinical Pedodontics. Yr. 2 hr. Lectures and clinical practice in the diagnosis and treatment of diseased, damaged, or abnormal conditions of the primary dentition.

286. Clinical Pedodontics. Yr. 2 hr. Clinical instruction in child management, child diseases affecting the dentition, interceptive and preventive orthodontics, and the application of restorative procedures essential in the treatment of the child.

PERIODONTICS

Professor Fraleigh; Instructor Dempsey.

240. Periodontic Technics. II. 1 hr. The histopathology of periodontal disease and its treatment, with emphasis on correct instrumentation as related to the histology and physiology of the tissues involved.

263. Clinical Periodontics. Yr. 2 hr. Clinical diagnosis, classification and treatment of periodontal diseases with instruction in etiology, smyptomatology and prognosis.

277. Clinical Periodontics. Yr. 2 hr. Clinical application of the principles taught in preceding courses, emphasizing the relation of the preclinical or basic sciences to therapy in the clinical practice of periodontics.

PROSTHODONTICS

Professor Davis; Assistant Professors F. E. Boyers and Overberger.

213. Complete Denture Technics. II. 3 hr. Principles and procedures followed in the construction of complete dentures.

234. Partial Denture Technics. Yr. 4 hr. Principles and procedures followed in the construction of removable partial dentures.

250. Clinical Prosthodontics. Yr. 4 hr. Lectures, demonstrations, and clinical practice in methods of full and partial denture prosthesis.

276. Clinical Prosthodontics. Yr. 4 hr. Instruction in diagnosis, treatment planning, and clinical practice in the art of full and partial denture construction.

SOCIAL RELATIONS

Professors Randolph and Morris; Assistant Professors F. F. Boyers and Howard; Instructor (part-time) Brown.

226. Oral and Written Communication. II. 2 hr. Lectures on the preparation and uses of oral and written communication; the use of the dental library; oral presentation of discussions and reports.

290. Ethics. II. 1 hr. Fundamental principles of ethics and their application in dental practice. The ethical obligations of the dentist to his patient, the community, society, and his colleagues in all the health sciences.

291. History of Dentistry. II. 1 hr. Study of origin and development of dentistry.

294. Practice Administration. I. 1 hr. A course designed to prepare the student for the effective management of his total professional responsibilities, both in and outside his office.

295. Jurisprudence. I. 1 hr. Lectures designed to acquaint the dental student with the fundamental legal rights, obligations, and responsibilities of the dentist.

297. Public Health Dentistry. II. 1 hr. Emphasis on public health practices designed to reduce the occurrence or the extension of dental diseases; to identify the place dental public health occupies in the field of general public health; and to acquaint the student with methods and materials suitable for use in administering dental public health programs.

SPECIAL COURSES

299. Research in Dentistry. II. 3 hr. Completion of a research project and preparation of a supporting thesis designed to: (1) give the student a better understanding of the methods and procedures used in research and a fuller appreciation of its value in dentistry; and (2) enhance the student's ability to discover, evaluate, arrange, and present his findings in a professional manner.

Division of Dental Hygiene

GENERAL INFORMATION

The dental hygiene program is a Division of the School of Dentistry. Its curriculum offers a four-year degree program for dental hygienists. The course of study is an integration of liberal arts courses with specific dental hygiene subjects. Such a program affords the dental hygiene student an excellent opportunity to receive a well rounded basic education combined with that of a professional specialty. Upon the fulfillment of all prescribed requirements and with the recommendation of the School of Dentistry, the candidate shall be awarded the degree of Bachelor of Science in Dental Hygiene.

ENTRANCE REQUIREMENTS

See page 74, and also the *Announcements* of the Medical Center.

CURRICULUM

The liberal arts are emphasized in the first year of the dental hygiene curriculum. In succeeding years, more time will be devoted to dental hygiene courses and less time given to liberal arts subjects. The basic curriculum conforms to the accreditation requirements of the Council on Dental Education of the American Dental Association.

Following is the Dental Hygiene curriculum for the first year of study:*

FIRST YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
English 1	3	English 2	3
Biology 1	4	Biology 2	4
Humanities 1	4	Humanities 2	4
Dental Hygiene 1	2	Dental Hygiene 2	2
Electives (Preferably non-scientific)	3	Electives (Preferably non-scientific)	3
Physical Education	1	Physical Education	1
	17		17

COURSES OF INSTRUCTION*

DENTAL HYGIENE

1. Dental Hygiene. I. 2 hr. Orientation. An introduction to the historical development of the dental hygiene program. Miss Steele

2. Dental Hygiene. II. 2 hr. Orientation. A survey of the scope of service, literature, education, ethics, professional organization, and opportunities in the area of dental hygiene. Miss Steele

*Courses are listed only for classes currently enrolled.

The School of Medicine

GENERAL INFORMATION

Application for admission in September, 1963, should be made promptly upon completion of the 1961-62 school year (June 1962). The latest date for filing an application for September, 1963 is December 1, 1962.

For additional information see page 76, or the *Announcements* of the Medical Center.

DEGREES

The degree of *Doctor of Medicine* (M.D.) is granted to those students who have completed the prescribed curriculum and who have been recommended for the degree by the faculty of the School of Medicine.

CURRICULUM PLAN

Course		1st Semester Lect.	1st Semester Lab.	2nd Semester Lect.	2nd Semester Lab.	Year Total Lect.	Year Total Lab.	Credit Hours
FIRST YEAR								
Biochem.	231	64	128			64	128	8
Anat. (Microanat.)	205	48	96			48	96	6
Anat. (Gross Anat.)	201	64	96	48	96	112	192	12
Anat. (Neuroanat.)	203			48	64	48	64	5
Physiology	241			112	128	112	128	9
TOTALS		176	320	208	288	384	608	40
SECOND YEAR								
Medicine	221	16	32			16	32	2
Medicine	223	16	0			16	0	1
Microbiol.	221	48	144			48	144	7
Pathology	251	96	160			96	160	10
Medicine	222			0	48	0	48	2
Microbiol.	222			16	32	16	32	2
Pathology	252			64	96	64	96	8
Pharmacol.	262			80	96	80	96	6
Health & Prev. Med.	222			32	0	32	0	2
Psychiatry	221			16	0	16	0	1
TOTALS		176	336	208	272	384	608	41

THIRD AND FOURTH YEARS

During the 24 months between the completion of the second year and the granting of the degree, each student will be in school a total of 21 months, with one 3-month vacation period at some time during this interval.

Thus can be provided the rotation of student groups through clerkships in the major hospital services, followed by integrated activities in the out-patient clinics. Appropriate lectures, seminars and conferences offer a graduated and progressive learning experience.

Each student will be expected to spend one 3-month period in an individually selected experience involving either laboratory or clinical investigation (or both). This quarter may be spent in any department at the West Virginia University Medical Center or, upon approval, at some other institution.

The table below illustrates the rotation of students through clinical and elective experiences for the 1962-1963 school years.

	1961	1962						1963	
	Sept. 18	Jan. 3	Mar. 26	July-Oct.		Nov.-Feb.		Mar.-June	
Medicine Clerkship (Medicine 231)	A	B	C						
Pediatric Clerkship (Pediatrics 231)	C	A	B						
(Surgery 231) Surgery Clerkship	B_2	C_2	A_2	B_1		C_1		A_1	
Elective	B_1	C_1	A_1	B_2		C_2		A_2	
Psychiatry (Psychiatry 241)				A_1	A_2	B_2	B_1	C_2	C_1
Obstetrics-Gynecology (Obstetrics-Gynecology 241)				A_2	A_1	B_1	B_2	C_1	C_2
Out-Patient Clinic (Conjoined Course 241)				C		A		B	

COURSES OF INSTRUCTION

MEDICINE

Professors Flink and Sleeth; Clinical Professor Whittlesey; Associate Professors M. J. Albrink, Andrews, Condry, and Marshall; Clinical Associate Professors Lawless and Maxwell; Assistant Professors Anderson, Conn, Harley, Nelson (Chairman, Division of Neurology), Quintero (Chairman, Division of Allergy); Clinical Assistant Professors Allen, C. Johnson, Van Lith; Instructors J. Jones, Welton (Chairman, Division of Dermatology); Clinical Instructors Glick, Koppel, Mutch, Piatt, and Stout.

221. Physical Diagnosis. I. (Second Year). 2 hr. Examination of normal subjects.

222. Physical Diagnosis. II. (Second Year). 2 hr. Practical experience in history taking and physical examination of patients.

223. History of Medicine. I. (Second Year). 1 hr. Brief history of development of the art and science of medicine.

231. Clinical Clerkship in Medicine. (Third Year). CR. Required of third year medical students. The individual student is assigned responsibility for specific patients from the hospital or out-patient service of the respective department in which he is serving at the time. He is an integral part of the team providing diagnostic and treatment services needed by the patient, under direct supervision of members of the faculty of the department. The student elicits the patient's history, performs physical examinations, and performs or secures indicated laboratory and clinical studies. The student records his findings and presents case reports for discussion by members of the faculty during hospital rounds or out-patient clinics. The student attends such staff conferences, etc., as directed by the several departments. Clerkship in medicine occupies 12 weeks.

OBSTETRICS AND GYNECOLOGY

Professor Fugo; Research Professor Van Liere; Clinical Assistant Professors Greco, Mahan, and Thompson; Instructor Goplerud.

231. Junior Lectures in Obstetrics and Gynecology. (Third Year). CR. Lectures in obstetrics and gynecology required of third-year medical students.

241. Clinical Clerkship in Obstetrics and Gynecology. (Fourth Year). CR. Six weeks experience for specific patient care including history taking, physical examination, laboratory analysis and clinical studies. Faculty and housestaff supervision as well as departmental and interdepartmental conferences are important components of this clerkship.

PEDIATRICS

Professor Klingberg; Assistant Professors B. Jones, Lucas; Clinical Assistant Professor Phillips.

231. Clinical Clerkship in Pediatrics. (Third Year). CR. Required of third-year medical students. See description of clinical clerkship under Med. 231 (above). Clerkship in Pediatrics occupies 6 weeks.

PSYCHIATRY

Professor Loftus.

221. Introductory Lectures. (Sophomore Medical Students). II. 1 hr. Fundamentals of normal and abnormal behavior and psychodynamics.

241. Clinical Clerkship in Psychiatry. (Fourth Year). CR. Required of fourth-year medical students. See description of clinical clerkship under Med. 231 (above). Clerkship in Psychiatry occupies 6 weeks.

HEALTH AND PREVENTIVE MEDICINE

Lecturer Viggiano.

222. Health and Preventive Medicine. (Second Year). 2 hr. PR: Consent. Introduction to principles of public health.

RADIOLOGY

Professor Amory; Clinical Associate Professors Shaffer and Smith.

SURGERY

Professor Zimmermann; Clinical Professor Pickett (Chairman, Division of Orthopedic Surgery), C. Pride; Associate Professors Bloor (Chairman, Division of Neurosurgery), Craythorne (Acting Chairman, Division of Anesthesiology), Gerwig, Milam (Chairman, Division of Urology), Warden; Clinical Associate Professors Young, Trotter (Chairman, Division of Opthalmology); Assistant Professors Mowlem, Nugent (Neurosurgery), Yeakel (Anesthesiology); Clinical Assistant Professors S. Hall, Heiskell, Humphries, L. Miller, M. Pride; Instructors Baker (Anesthesiology), Currie, Moran; Clinical Instructors Easley, Linger, Thrush, Walker, J. Wilson, R. Wilson.

231. Clinical Clerkship in Surgery. (Third Year). CR. Required of third-year medical students. See description of clinical clerkship under Med. 231. Clerkship in Surgery occupies 12 weeks.

CONJOINED COURSES

(Throughout the curriculum in medicine certain courses are conducted on non-departmental or inter-departmental lines. These have been designated as Conjoined Courses, and are described in the following section.)

221. Lectures in Psychobiology and Biostatics. (Second Year). I. 2 hr.

241. Out-Patient Clinic. (Fourth Year). CR. Contact with and responsibility for patients visiting the outpatient clinics in Medicine, Obstetrics-Gynecology, Psychiatry and Surgical Specialities.

Division of Medical Technology

GENERAL INFORMATION

The program in Medical Technology at West Virginia University consists of two years of pre-medical technology and two years of medical technology. The Bachelor of Science Degree is awarded by the School of Medicine after satisfactory completion of the requirements outlined in this Bulletin.

The first two years of pre-medical technology may be taken in any institution of recognized standing which offers the courses required for admission into the medical technology curriculum. The College of Arts and Sciences of West Virginia University offers a pre-medical technology curriculum meeting these requirements.

The third year is a continuation of general education and the fourth year is 12 months of practical education in the University Hospital Laboratories. During these two years, the student is registered in the School of Medicine under the supervision of the Directors of the Division of Medical Technology.

The total program prepares the student for supervisory and staff positions in clinical, research, public health, and industrial laboratories. It also fulfills the requirements of the Board of Registry of Medical Technologists of the American Society of Clinical Pathologists.

ADMINISTRATION

The operation of the Division of Medical Technology is the joint responsibility of the Medical Director and Associate Director reporting to the Dean of the School of Medicine. A committee, broadly representative of the faculty of the School of Medicine, advises the Directors.

ACCREDITATION

Educational standards for medical technologists are under the general supervision of the Council on Medical Education and Hospitals of the American Medical Association. Graduates of this program are eligible for examination by the Board of Registry of Medical Technologists of the American Society of Clinical Pathologists. Before the student is accepted into the fourth year (the clinical phase of medical technology) an approved transcript evaluation from the Registry of Medical Technologists must be on file in the offices of the Assistant Registrar, Medical Center.

DEGREE

The Bachelor of Science Degree in Medical Technology will be granted to those students who have completed the prescribed curriculum and who have been recommended for the degree by the faculty of the School of Medicine.

CURRICULUM: PRE-MEDICAL TECHNOLOGY

FIRST YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
Chem. 1, Inorganic	4	Chem. 2, Inorganic	4
English 1, Comp. & Rhetoric	3	English 2, Comp. & Rhetoric	3
Math. (Algebra)	3	Elective*	3
Biol. or Zool. 1 General	4	Biol. or Zool 2, General	4
Mil. or Air Sci. 1 (M)	2	Mil. or Air Sci. 2 (M)	2
Phys. Educ.	1	Phys. Educ.	1
Med. Tech. 1**	1	Med Tech. 2**	1
	16-18		16-18

SECOND YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
Chem. 131, Organic	4	Chem. 106, Quantitative	4
English or American Lit.	3	English or American Lit.	3
Elective*	3	Elective*	3
Physics 1, Introductory	4	Physics 2, Introductory	4
Mil. or Air Sci. 3 (M)	2	Mil. or Air Sci. 4 (M)	2
Phys. Educ. (W)	1	Phys. Educ. (W)	1
Med. Tech. 3**	1	Med. Tech. 4**	1
	16-17		16-17

*Electives: Students who plan to do graduate study should be encouraged to take foreign language as Elective.

Other recommended Electives are History 1, 2, 52, or 53; Sociology 1, and Psychology 1.

**Medical Technology 1, 2, 3, and 4 are not required subjects, but it is highly recommended that all students take these courses.

MEDICAL TECHNOLOGY CURRICULUM

THIRD YEAR

(Medical Technology I)

The courses of this year give the student an introduction to the basic medical sciences.

During the first semester of this year students must take the University examination to test proficiency in English unless this requirement has been previously satisfied. Successful passing of this examination is a requirement for all baccalaureate degrees awarded by the University.

Courses required are as follows:

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
Comparative Anat. 231	5	Parasitol. 224	4
Med. Tech. 100	3	Microbiol. 223	5
Biochem 139	4	Biochem. 239	4
Physiol. 141	4	Med. Tech. 101	4
	16		17

TOTAL ..... 33 hr.

FOURTH YEAR

(Medical Technology II)

The fourth year consists of 12 full months of instruction in the University Hospital Laboratories and includes the courses listed below. Students begin a rotation schedule in the clinical laboratory in June of their Senior year. This schedule continues until the following June. Didactic work is included with the practical instruction. Due to the nature of the profession, students may be required to be "on duty" at irregular hours at the discretion of the Medical and Technical Directors.

Women students must live in approved University housing and must follow the rules and regulations for all senior women.

Approximately two weeks vacation, exclusive of national holidays, will be allowed during the twelve months. If the student is absent more than one week due to illness, the time loss must be made up at the end of the school year.

Courses for which the student registers are:

SUMMER SESSION

	Hr.
First 6 weeks	
Orientation 200	2
Second 6 weeks	
Metabolimetry and Electrocardiography 203	2
	4

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
Clinical Microscopy 206	4	Clinical Microbiology 201	4
Histological Technic 207	3	Clinical Chemistry 204	4
Blood Bank Procedures 202	2	Advanced Hematology 298	4
Clinical Hematology 208	2	Lab. Management and Records 205	2
Seminar 210	2	Seminar 210	2
	13		16

TOTAL ..... 33 hr.

COURSES OF INSTRUCTION

Assistant Professor Love; Instructor Petracca.

1. Orientation to Medical Technology. I. 1 hr. The principles and practices of medical technology, and the role of the medical technologist as a member of the health team.

2. Orientation to Medical Technology. II. 1 hr. Continuation of the work of the first semester.

3. Introduction to Medical Sciences. I. 1 hr. Lectures centered on case presentations of patients at the University Hospital. Serves to introduce the student to medical terms and illustrates the various aspects of patient care including the laboratory diagnostic procedures which the students will be doing during the third and fourth year.

4. Introduction to Medical Sciences. II. 1 hr. Continuation of the work of the first semester.

100. Elementary Histology. I. 3 hr. A study of the elements of histological structure, including blood. Lect. 2 hr. per week; lab. 3 hr. Other students as approved.

101. Clinical Laboratory Diagnostic Methods. II. 4 hr. A study of procedures used in the clinical laboratories. Lect. 2 hr. per week; lab 6 hr. Other students as approved.

200. Orientation. S. 2 hr. (For Senior students). The principles and practices of medical technology.

201. Clinical Microbiology. I, II, and S. 4 hr. Eight weeks of instruction in bacteriology, mycology, and parasitology and four weeks of instruction in serology.

202. Blood Bank Procedures. I, II, and S. 2 hr. Four weeks of instruction in blood banking. Laboratory procedures required for transfusions, preservation of blood and blood derivatives, and antibody studies are included here.

203. Metabolimetry and Electrocardiography. S. 2 hr. The study of the metabolism of carbohydrates, proteins, fats, minerals, etc., and the technique of basal metabolism; study of the electrocardiographic machine and its practical application to patients.

204. Clinical Chemistry. I, II, and S. 4 hr. Eight weeks of instruction in the procedures used in the clinical chemistry laboratory, and four weeks of advanced instruction in more specialized technics.

205. Laboratory Management and Records. II. 2 hr. A study of laboratory organization, economics, ethics, and records.

206. Clinical Microscopy. I, II, and S. 4 hr. Instruction in urine analysis, gastric analysis, pregnancy tests, and other tests.

207. Histological Technic. I, II, and S. 3 hr. The preparation of human tissues and organs for gross and microscopic examination. Four weeks are spent in the Department of Pathology of the Medical Center.

208. Clinical Hematology. I, II, and S. 2 hr. Twelve weeks of instruction in laboratory methods used in study of hematologic disorders.

209. Advanced Hematology. I, II, and S. 4 hr. A study of leukemias, anemias, and other blood dyscrasies.

210. Seminar. I, II. 1-4 hr. Each student is required to take at least one seminar during each term on some phase of medical technology.

The School of Nursing

GENERAL INFORMATION

West Virginia University School of Nursing offers a basic collegiate program for high school graduates who wish to prepare for careers in professional nursing. The program of studies consists of four academic years of general and profession-related courses with a major in nursing, culminating in the granting of the baccalaureate degree. It enables the student to acquire the knowledge and skills needed by a professional nurse in providing health care to the individual and family, in hospitals, and community health agencies. Foundations acquired in this program provide a basis for the graduate to progress rapidly to positions of increasing responsibility and leadership in nursing, and serve as a background for entrance into graduate programs preparing for positions in teaching, research, or nursing administration.

The School of Nursing functions within the administrative framework and philosophy of West Virginia University as one of the 15 schools and colleges of the University. All resources of the University are available to the School, and the curriculum is designed to enable nursing students to enjoy the same privileges and responsibilities as other University students. Courses in arts and sciences which form the basis of nursing are taught on the Main Campus; nursing courses, which are taught throughout the four-year program, are offered on the Medical Center Campus. Nursing students receive the major portion of their clinical experience in the University Hospital, with experiences also in community health agencies.

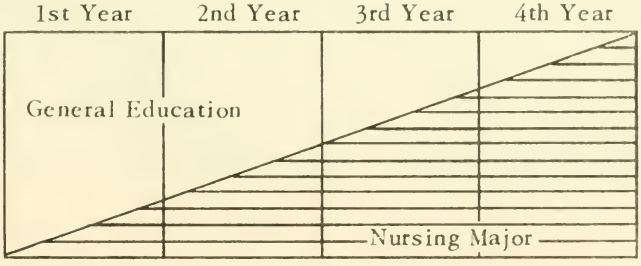
ACCREDITATION

Established in the fall of 1960, West Virginia University School of Nursing has been granted accreditation status appropriate to a new school, that of provisional accreditation, by the West Virginia Board of Examiners for Registered Nurses, thereby enabling its graduates to take the licensing examinations to qualify as registered nurses. Application for national accreditation and for full State accreditation will be made as soon as this is permissible—in the spring of 1964.

CURRICULUM

The curriculum, leading to a baccalaureate degree with a major in nursing and a minor in social science, consists of four academic years of study. It is required that *at least the last three years* be taken at West Virginia University where students have the opportunity to gain nursing experience at the University Hospital.

The curriculum is designed to offer general education and nursing courses simultaneously throughout the four-year program. During the first two years the general education courses predominate. During the last two years nursing courses increase as the general education courses decrease. Schematically, the design may be shown thus:



The sequence of nursing courses differs from the pattern found in most schools of nursing. Clinical nursing begins in the sophomore year and is so planned that the student will study in each clinical area each year, proceeding from the simple to the complex learning experiences as she advances through the program. For example, she will have experience in maternity nursing as a sophomore, again as a junior, and again as a senior. The same is true in each of the clinical nursing subjects, including public health nursing. She will receive no full blocks of clinical experience at any one time, but will have opportunity to return to each field after adding to her knowledge in other fields of nursing and in her general education courses.

These experiences enable the student to acquire truly professional attitudes as she develops an understanding of the fundamentals of nursing and gains the ability to apply scientific principles effectively in nursing practice. A graduate of the program is prepared for beginning practice in all fields of professional nursing including public health nursing. Upon completion of the program she is eligible to take State licensing examinations to become a registered nurse.

The curriculum enables a graduate to proceed directly into graduate study where she may specialize to become a clinical specialist, teacher, or administrator in nursing. The School expects that the university student of today will be the leader of tomorrow.

CURRICULUM PLAN

FIRST YEAR

	Hr.
English 1 and 2	6
Chemistry 1 and 2	8
Humanities 1 and 2	8
Sociology 1	3
Psychology 1	3
Nursing 1 and 2	4
Physical Education	2
	34

SECOND YEAR

	Hr.
Anatomy 101	3
Physiology 101	3
Nutrition 1	2
Sociology 104	3
Education 106	3
Nursing 10, 20, 30	6
Nursing 40, 50, 60	6
Microbiology 26	3
Pharmacology 60	3
Political Science 1 or 2	3
	35

THIRD YEAR

Courses to be determined.

FOURTH YEAR

Courses to be determined.

PROGRAM FOR REGISTERED NURSES

Graduates of diploma schools of nursing who desire to complete requirements for the baccalaureate degree are admitted to the School of Nursing as special students. They will be required to complete the liberal arts courses as prescribed in the basic curriculum and are granted advanced standing in the nursing courses. Evaluation of credit is on an individual basis in view of the wide variety of previous educational experience found in the registered nurse group. Nurses with no previous college credit will require approximately 2½ years to complete requirements for the degree.

Many of the liberal arts courses can be taken in residence at West Virginia University. Nurses may take liberal arts work on either a part-time or full-time basis, if in residence at the University. Clinical nursing courses are offered only to full-time students.

Nurses who wish to work part-time while attending school are offered employment in the University Hospital. Inquiries regarding employment should be addressed to the Director of Nursing Service.

TRANSFER STUDENTS

Students from other colleges and universities who wish to enter the School of Nursing may make application to do so by submitting transcripts of all previous college work showing an average of C+ or better. Transfer students are accepted only in the fall semester. Because of the design of the curriculum, students must complete *a minimum of three years* in this School, regardless of previous college credit.

Students are accepted for transfer only if vacancies exist in the sophomore class. Students who are accepted are required to attend summer school prior to their admission in the fall to complete freshman nursing courses.

COURSES OF INSTRUCTION

Nsg. 1. Orientation to Nursing. I. 2 hr. Survey of the role of the professional nurse as a member of the health team. Presented through observations, lectures, laboratory, tours of medically related hospital departments, assigned readings and interviews, and introductory experience with selected patients and families.

Nsg. 2. The Nurse in Western Culture. II. 2 hr. Historical approach to the development of nursing with emphasis on its accommodation to changing social, cultural, economic, and health concepts.

Phys. 101. Principles of Human Physiology. I. 3 hr. (For nursing students.) Normal functions of the human organism. Lecture, demonstration and laboratory.

Anat. 101. Principles of Human Anatomy. I. 3 hr. PR: Consent. Lectures and demonstrations on the anatomy of the human body, with particular attention to morphological concepts. Designed for students in the paramedical sciences.

Nsg. 10. Introduction to Nursing. I, II. 2 hr. Introduction of concepts and procedures basic to professional nursing practice.

Nsg. 20. Principles of Medical-Surgical Nursing. I, II. 2 hr. Introduction of concepts, principles and practices which have special application in the nursing care of patients with medical or surgical illnesses.

M. Bio. 26. Microbiology. II. 3 hr. (Primarily for nursing students.) A study of pathogenic organisms.

Pcol. 60. Pharmacology. II. 3 hr. (Primarily for nursing students.) Physiology, chemistry, pharmacodynamics, toxicology, and therapeutic use of drugs as used in nursing practice.

Nsg. 30. Principles of Child Health. I, II. 2 hr. Introduction to concepts, principles and practices basic to maintenance of health of children.

Nsg. 40. Principles of Maternity Nursing. I, II. 2 hr. Introduction of concepts, principles and practices basic to maternity nursing.

Nsg. 50. Emotional Aspects of Illness. I, II. 2 hr. Introduction of concepts, principles and practices basic to an understanding of the emotional aspects of illness.

Nsg. 60. Introduction to Community Nursing. I, II. 2 hr. Introduction of concepts, principles and practices basic to an understanding of community health.

The School of Pharmacy

GENERAL INFORMATION

The curriculum in Pharmacy at West Virginia University consists of two years of pre-pharmacy requirements followed by three years of professional study.

AIMS AND PURPOSES

The principal objective of the School of Pharmacy is to educate men and women who intend to undertake the practice of pharmacy.

The curriculum is designed to equip the student with the scientific and technical knowledge required for pharmaceutical practice and to inculcate in the student a concept of the pharmacist's professional responsibilities as a guardian of the public health.

OPPORTUNITIES IN PHARMACY

A majority of pharmacy graduates enter practice in pharmacies open to the general public. However, a number of positions are available in institutional pharmacies and in various governmental agencies. Pharmacists are eligible for commissions in the Armed Forces and the U. S. Public Health Service.

Graduates may prepare themselves for careers in teaching and research by entering graduate schools for specialization in pharmacy, pharmacognosy, pharmaceutical chemistry, pharmacy administration, and pharmacology. The pharmaceutical industry provides opportunities in a variety of capacities in promotion, distribution, production, and research.

WOMEN IN PHARMACY

Experience has proved that women possess a particular fitness for the study and pursuit of pharmacy. In certain fields, such as hospital pharmacy, women appear to be given preference. The number of women engaged in the profession is constantly increasing, and women high-school graduates having an aptitude for scientific subjects would do well to seriously consider pharmacy as their profession.

ACCREDITATION

The School of Pharmacy of West Virginia University is accredited by the American Council of Pharmaceutical Education. The Council is composed of members from the American Pharmaceutical Association, the National Association of Boards of Pharmacy, the American Association of Colleges of Pharmacy, and the American Council on Education.

LEGAL REQUIREMENTS FOR PRACTICE IN WEST VIRGINIA

The West Virginia law provides that a person "in order to be registered as a pharmacist . . . shall be a citizen of the United States, not less than 21 years of age," and "shall present to the board of pharmacy satisfactory evidence that he is a graduate of a recognized school of pharmacy as defined by the board of pharmacy, and in addition thereto he shall have at least one year of practical experience in a drug store under the instruction and supervision of a registered pharmacist, and shall pass satisfactorily an examination by or under the direction of the board of pharmacy.

"Every applicant for registration as a pharmacist shall present to the board of pharmacy satisfactory evidence that he is a person of good moral character and not addicted to drunkenness or the use of narcotic drugs."

West Virginia law provides that the year of internship be registered with the West Virginia State Board of Pharmacy within ninety days from the beginning of such work for it to be credited toward the required year of experience.

RECIPROCITY

Graduates of the School of Pharmacy are eligible for examination to practice pharmacy in any state. Graduates who successfully pass the West Virginia State Board of Pharmacy examination are privileged to reciprocate with forty-six other states and with the District of Columbia and Puerto Rico, without further examination, provided they meet the requirements of these states.

ADMISSION TO ADVANCED STANDING

Students from other accredited schools of pharmacy may be admitted provided they meet the pre-pharmacy requirements of West Virginia University, have a 2.00 average, and are eligible for readmission for the degree in pharmacy in the school previously attended. "D" grades in professional courses will not be transferred.

STUDENT STATUS AND ADVANCEMENT

The determination of student status is in the hands of the Committee on Student Status and Advancement. All actions of the Committee are subject to approval of the Dean. The grading system and the calculation of grade-point averages are described elsewhere in this bulletin. In the School of Pharmacy all grades, except W and WP grades, are used to determine the cumulative grade-point average. The advancement of students in the School of Pharmacy is based on satisfactory academic performance as well as the completion of course requirements. To be in good standing, a student must maintain at least a 2.00 average.

If in any semester while enrolled in the School a student fails to attain a 2.00 average, his status is subject to review by the Committee. Any student receiving a 1.5 average or less during a period of registration shall be subject to suspension. Any student who fails in one-half or more of the credit hours in which he is enrolled in a period of registration is automatically suspended. A student under suspension may petition the Committee on Student Status and Advancement for reconsideration. Except for unusual circumstances, a student may be reinstated only once.

OFF-CAMPUS EDUCATIONAL ACTIVITIES

Each student is required as a regular part of the curriculum to participate in several off-campus activities. Annually arrangements are made for visits to the laboratories of a pharmaceutical manufacturing company. These visits provide the student with some knowledge of the research activities required for the development of new drugs and dosage forms, and of the processes used in the production and marketing of quality-controlled pharmaceuticals. Some of the laboratories visited are: The Abbott Laboratories; Eli Lilly & Company; Lederle Laboratories; E. R. Squibb & Sons; Parke, Davis and Company; and The Upjohn Company.

Other off-campus activities include visits to service wholesale drug companies. Here the senior students learn of the functions and services performed by this vital link in drug distribution. The facilities visited are those of the Clarksburg Drug Company, Clarksburg; the Kauffman-Lattimer Company, Parkersburg; or the Ohio Valley Drug Company, Wheeling.

DEGREE REQUIREMENTS, CURRICULA, COURSES

REQUIREMENTS FOR THE DEGREE

The degree of Bachelor of Science in Pharmacy (B.S.Pharm.) is conferred upon any student who complies with the general regulations of the University concerning degrees, satisfies all entrance and School requirements, and completes the curriculum of the School of Pharmacy.

To be eligible for graduation, a student must have an average of "C" or an average of two grade points for all work presented for graduation.

Each candidate for graduation from the School of Pharmacy shall be required to make at least one visit to the manufacturing and research facilities of a major pharmaceutical firm.

COURSE CHANGES

A student who desires to obtain credit for a course in place of any course prescribed in his curriculum must obtain permission of such change from the Committee on Student Status and Advancement.

PROFESSIONAL CURRICULUM

FIRST YEAR

First Semester	*Hr.*	*Second Semester*	*Hr.*
Anatomy 101	3	Chemistry 238	4
Chemistry 233	5	Microbiology 220	5
Pharmacy 101	3	Pharmacy 104	3
Pharmacy 102	3	Pharmacy 105	2
Pharmacy 103	2	Pharmacy 271	3
	16		17

SECOND YEAR

First Semester	*Hr.*		*Hr.*
Biochemistry 139	4	Pharmacy 108	2
Pharmacy 106	3	Pharmacy 109	3
Pharmacy 107	2	Pharmacy 123	3
Pharmacy 121	3	Physiology 141	4
Pharmacy 122	3	Pharmacy 142	3
Pharmacy 141	3	Pharmacy 143	2
	18		17

THIRD YEAR

First Semester	*Hr.*		*Hr.*
Pharmacology 261	6	Pharmacy 204	2
Pharmacy 201	3	Pharmacy 205	2
Pharmacy 221	3	Pharmacy 206	2
Pharmacy 272	3	Pharmacy 222	3
*Pharmacy 203	2	Pharmacy 273	3
		Pharmacy 274	3
		*Elective	3
	17		18

*Seniors will alternate the semester in which they will enroll in Pharmacy 203 (Hospital Pharmacy) and the required elective.

COURSES OF INSTRUCTION

PHARMACY PROGRAM

Professors Bachmann, Geiler and Hayman; Assistant Professors Blissitt, Core, O'Connell, and Wojcik; Instructors George and Thacker.

Pharmacy

101. Principles of Pharmacy. I. 3 hr. A systematic study of the fundamental pharmaceutical processes, physical concepts, and terminology. Lectures and recitations. (45 hr.).

102. Pharmaceutical Calculations. I. 3 hr. The mathematical problems and calculations encountered in and peculiar to pharmaceutical practice. (45 hr.)

103. History of Pharmacy. I. 2 hr. A course designed to give the student a deeper appreciation of the background of pharmacy and its development from the ancient times to the present. (30 hr.) Lectures and recitations.

104. General Pharmacy 1, Lectures. II. 3 hr. PR: Pharm. 101 and 102. A course dealing with the theories, processes of manufacture, and nomenclature of simple galenical preparations used in pharmacy, both official and non-official. (45 hr.) Lectures and recitations.

105. General Pharmacy 1, Laboratory. II. 2 hr. A laboratory course to accompany Pharm. 104, where representative examples of various preparations are prepared. (90 hr.) Laboratory.

106. General Pharmacy 2. I. 3 hr. PR: Pharm. 104 and 105. A detailed study of the more complex types of official and non-official preparations. (45 hr.) Lectures and recitations.

107. Introductory Pharmacy Dispensing. I. 2 hr. PR: Pharm. 104 and 105. A study of the compounding and dispensing of the basic forms of medication. Laboratory. (90 hr.)

108. Public Health and Hygiene. II. 2 hr. A study of the measures required for the maintenance of health and for the prevention and control of disease, and the application of the pharmacist's knowledge, skill, and facilities to the promotion of the health and welfare of the public in cooperation with public and private health agencies. (30 hr.) Lectures and recitations.

109. Intermediate Pharmacy Dispensing. II. 3 hr. PR: Pharm. 106 and 107. The problems presented in compounding are discussed and the more difficult types of pharmaceutical preparations are made. Lectures and Laboratory. (105 hr.)

116. Pharmaceutical Investigation. I or II. 1-3 hr. Original investigation in pharmacy, pharmaceutical chemistry, or pharmacognosy.

117. Dispensing Pharmacy. I or II. 1-3 hr. A practical course in the dispensing of prescriptions, open to a few students upon permission. The students assist in compounding of prescriptions in the Health Service Pharmacy under the immediate supervision of a registered pharmacist. (45 hr.)

201. Dispensing Pharmacy. I. 3 hr. PR: Pharm. 109. The theories and laboratory practices of previous compounding and dispensing courses are correlated with emphasis on the resolution of incompatibilities. Lectures and Laboratory. (105 hr.)

203. Hospital Pharmacy. I, II. 2 hr. A course arranged to give to the senior student practical hospital experience, under proper supervision, in the filling of prescriptions and the preparation of in-patient hospital medicinal needs.

204. Dispensing Pharmacy Lectures. II. 2 hr. PR: Pharm. 201. A comprehensive lecture course completing the coverage of theoretical aspects begun in Pharm. 201. (30 hr.)

205. Dispensing Pharmacy Laboratory. II. 2 hr. PR: Pharm. 201. A course designed to familiarize students with the compounding and dispensing of currently prescribed medication. (90 hr.)

206. Medical Emergencies. II. 2 hr. A course embracing accident prevention and medical emergency procedures as recommended for practicing pharmacists.

207. Seminar in Pharmaceutical Sciences. I, II. 1 hr. per sem. PR: Consent. Presentation and discussion of special topics in pharmaceutical sciences.

Pharmacy Administration

121. Pharmaceutical Law. I. 3 hr. A course designed to give the student a broad knowledge of the legal problems which confront the pharmacist. Special attention is given to the federal and state laws relating to the practice of pharmacy, narcotics, poisons, the pure food, drug and cosmetic acts, and the legal relationship of the pharmacist to the public. (45 hr.) Lectures.

122. Pharmacy Accounting. I. 3 hr. A study of the principles of accounting adapted to the needs of the pharmacist. (135 hr.) Laboratory.

123. Marketing of Drug Products. II. 3 hr. PR: Pharm. 121 and 122. A study of the marketing institutions and their functions involved in the distribution of drug products from the manufacturer to the retailer. (45 hr.) Lectures and discussion.

221. Pharmacy Management. I. 3 hr. A study of the principles and problems encountered in the acquisition, operation and control of a retail pharmacy. The course includes subject matter relating to store location, organization and management, leases, financing, departmentalization and arrangement, selection and supervision of personnel, expense and credit control. (45 hr.) Lectures and discussion.

222. Pharmacy Management. II. 3 hr. A study of the principles and methods used in managing the retail pharmacy. Subject matter includes buying and stock control, receiving and marking stock, pricing, sales promotion, and insurable risks. (45 hr.) Lectures and discussion.

Pharmacognosy

141. Pharmacognosy. I. 3 hr. PR. Chem. 238 and Microbiol. 220. A study of drugs of biological origin, both plant and animal; their specific origins, methods of preparation, active constituents, standards and medicinal use. (45 hr.) Lectures and recitations.

142. Pharmacognosy. II. 3 hr. PR: Pharm. 141. A continuation of Pharmacy 141. (45 hr.) Lectures and recitations.

143. Pharmacognosy Laboratory. II. 2 hr. PR: Pharm. 141. A study of drugs of biological origin; their identification by macroscopic and microscopic methods; biosynthesis of active constituents; isolation of active constituents; and identification and testing of the isolated constituents. (90 hr.) Laboratory.

Pharmaceutical Chemistry

271. Inorganic Pharmaceutical Chemistry. I. 3 hr. PR: Pharm. 101. A study of the inorganic chemicals associated with the practice of pharmacy. (45 hr.)

272. Organic Pharmaceutical Chemistry. I. 3 hr. PR: Biochem. 139 and Pharm. 142. A study of the modern synthetic drugs and natural products, with regard to nomenclature, methods of synthesis and relation to other drugs having similar therapeutic, physical and chemical properties. (45 hr.)

273. Organic Pharmaceutical Chemistry. II. 3 hr. PR: Pharm. 272. A continuation of Pharm. 272. (45 hr.)

274. Assay and Pharmaceutical Testing. II. 3 hr. PR: Pharm. 201 and 272. Application of basic scientific principles to the standardization and analysis of drugs and pharmaceutical products, with particular attention to newer analytical techniques. Lectures and Laboratory. (105 hr.)

COURSES OF INSTRUCTION IN OTHER FIELDS

Chemistry

233. Organic Chemistry. I. 5 hr. PR: Chem. 15. Three lectures and two three-hour laboratory periods.

238. Organic Chemistry. II. 4 or 5 hr. PR: Chem. 233. Two lectures and three three-hour laboratory periods.

FOUR-YEAR CURRICULUM

Discontinued September, 1959

FOURTH YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
Pcol. 261	5	Phar. 107	3
Phar. 105	2	Phar. 109	2
Phar. 108	3	Phar. 113	5
Phar. 110	3	Phar. 114	3
Safety Ed. 127	2	Phar. 203	3
	15		16

COURSES OF INSTRUCTION FOR FOUR-YEAR CURRICULUM

Pharmacy

105. History of Pharmacy. I. 2 hr. A course designed to give the student a deeper appreciation of the background of pharmacy and its development from the ancient times to the present. (30 hr.) Lectures and recitations.

108. Dispensing Pharmacy. I. 3 hr. A course dealing with the fundamentals of prescriptions including the receiving, compounding, pricing, and dispensing. The course includes a study of prescriptions with special reference to incompatabilities and the techniques in the proper dispensing thereof. A brief summary of prescription Latin is included. (45 hr.).

109. Dispensing Pharmacy. II. 2 hr. A laboratory course giving practical work in compounding the more difficult and unusual prescriptions. (90 hr.) Laboratory.

113. Pharmacy and Chemistry of Medicinal Products. II. 5 hr. A comprehensive study of the acids, bases, salts, and preparations which are commonly used in the practice of pharmacy with emphasis on the official compounds and preparations. (75 hr.) Lectures and recitations.

116. Pharmaceutical Investigation. I or II. 1-3 hr. Original investigation in pharmacy or pharmaceutical chemistry.

117. Dispensing Pharmacy. I or II. 1-3 hr. A practical course in the dispensing of prescriptions, open to a few students upon permission. The students assist in compounding of prescriptions in the Health Service Pharmacy under the immediate supervision of a registered pharmacist. (45 hr.).

118. Hospital Pharmacy Techniques. I or II. 1 hr. An orientation course in Hospital Pharmacy Dispensing. Open to a few students by permission. The student assists in the University Hospital Pharmacy under the immediate supervision of registered pharmacists.

203. Biological and Chemical Therapy. II. 3 hr. A study of hormones, glandular products, antibiotics, vitamins, and the more recent chemotherapeutic agents used medicinally. The course includes the methods of preparation and standardization of biologicals. (45 hr.) Lectures and recitations.

Pharmacy Administration

114. Pharmacy Management. II. 3 hr. A study of the business problems involved in the planning, merchandising, operation, and control of a retail pharmacy. The course includes store location, organization and management, financing, departmentalization and arrangement, selection and supervision of personnel, buying, pricing, sales promotion, selling, and control of stock, expenses, and credits. (45 hr.) Lectures and recitations.

Pharmaceutical Chemistry

107. Organic Pharmaceutical Chemistry. II. 3 hr. A study of the organic chemicals which are used as medicines or in the preparation of medicines. (45 hr.) Lectures and recitations.

110. Assay and Pharmaceutical Testing. I. 3 hr. Application of principles and techniques of analytical chemistry to the analysis of official and non-official preparations. (105 hr.) Lectures and laboratory.

The Division of Military Science and Air Science

BASIC COURSE—FIRST YEAR, 2 hr. (Army)

MILITARY SCIENCE 1. Leadership Laboratory; American Military Heritage, Individual Weapons and Marksmanship; 3 hr. per week.

MILITARY SCIENCE 2. Leadership Laboratory; U. S. Army and National Security; Military Theory; 3 hr. per week.

BASIC COURSE—FIRST YEAR, 2 hr. (Air Force)

AIR SCIENCE 1. Foundations of Aerospace Power. An introductory examination of the factors of aerospace power, major ideological conflicts, requirements for military forces in being, responsibilities of citizenship, and development and traditions of the military profession; Leadership Laboratory. 3 hr. per week.

AIR SCIENCE 2. Foundations of Aerospace Power. An introductory examination of the factors of role and attributes of the professional officer in American democracy, organization of the armed forces as factors in the preservation of national security, and the United States Air Force as a major factor in the security of the free world; Leadership Laboratory. 3 hr. per week.

BASIC COURSE—SECOND YEAR, 2 hr. (Army)

MILITARY SCIENCE 3. Leadership Laboratory; American Military History. 3 hr. per week.

MILITARY SCIENCE 4. Leadership Laboratory; Basic Tactics, Map and Aerial Photograph Reading. 3 hr. per week.

BASIC COURSE—SECOND YEAR, 2 hr. (Air Force)

AIR SCIENCE 3. Fundamentals of Aerospace Weapon Systems. An introductory survey of aerospace missiles and craft, and their propulsion and guidance systems; target intelligence and electronic warfare; nuclear, chemical and biological warhead agents; Leadership Laboratory. 3 hr. per week.

AIR SCIENCE 4. Fundamentals of Aerospace Weapon Systems. An introductory survey of defensive, strategic and tactical operations; problems, mechanics and military implications of space operations; and survey of contemporary military thought; Leadership Laboratory. 3 hr. per week.

ADVANCED COURSE—THIRD YEAR, 3 hr. (Army)

MILITARY SCIENCE 105. Leadership Laboratory; Leadership; Military Teaching Methods; Branches of the Army. 5 hr. per week.

MILITARY SCIENCE 106. Leadership Laboratory; Small Unit Tactics. 5 hr. per week.

ADVANCED COURSE—THIRD YEAR, 3 hr. (Air Force)

AIR SCIENCE 105. PR: Air Science 4 or equivalent.* Air Force Officer Development. Staff organization and functions, oral and written communication, and problem solving; Leadership Laboratory. 5 hr. per week.

*Equivalent credit as granted by the Registrar of the University and the Professor of Air Science. Students who have had previous active service and desire to enter this course must have their requirements and status determined by the Professor of Air Science at the time of initial entry into the University. See Page 70 of this **Catalog** for general regulations of the Division of Military Science and Air Science.

AIR SCIENCE 106. PR: Air Science 105. Air Force Officer Development. Basic psychological and sociological principles of leadership and their application to leadership practice and problems; and an introduction to military justice; Leadership Laboratory. 5 hr. per week.

ADVANCED COURSE—FOURTH YEAR, 3 hr. (Army)

MILITARY SCIENCE 107. Leadership Laboratory; Army Administration; Command and Staff; Estimate of the Situation and Combat Orders; 5 hr. per week.

MILITARY SCIENCE 108. Leadership Laboratory; Logistics, Supply Management; Military Law; Role of the United States in World Affairs; Service Orientation; 5 hr. per week.

ADVANCED COURSE—FOURTH YEAR, 3 hr. (Air Force)

AIR SCIENCE 107. PR: Air Science 106. An intensive study of global relations with emphasis on Internal Relations (Political Science elective) and administrative procedures and personnel actions in the Air Force; Leadership Laboratory 5 hr. per week.

AIR SCIENCE 108. PR: Air Science 107. An intensive study of global relations with emphasis on World Political Geography (Political Science elective) and Air Force personnel actions and administrative procedures; Leadership Laboratory. 5 hr. per week.

The School of Music

GENERAL INFORMATION

The School of Music of West Virginia University is a member of the National Association of Schools of Music. The requirements for entrance and for graduation as set forth in the *Announcements* of the School of Music are in accordance with the published regulations of that organization. The Music Education Program offered in the School of Music is fully accredited by the National Council for Accreditation of Teacher Education.

The School's facilities include twenty-one teaching studios, thirty practice rooms, band and orchestra rehearsal room, classrooms, student lounge, library, listening rooms, recital hall, dressing rooms, projection and recording room, and administrative offices.

The faculty of the School of Music consists of twenty-nine artist-teachers and ten graduate assistants. Each member was carefully selected because his musical background combined inspired teaching with outstanding experience as a professional performer.

The performing groups maintained by the School of Music are a Symphony Orchestra, four Bands, two Choruses, Opera Department, The American Arts Trio, and numerous student chamber music ensembles. Many concerts are given throughout the year by the School of Music, and in addition a number of outstanding concerts are provided by the University Convocation Committee.

Under an order of the Board of Governors, no degree will be conferred upon any candidate prior to payment of all tuition, fees, and other indebtedness to any unit of the University.

The Bachelor of Music Degree

The Bachelor of Music Degree is conferred upon any student who complies with the general regulations of the University concerning degrees, satisfies all entrance and departmental requirements,[1] and completes one of the following curricula in music with an average of two grade points per semester hour:[2]

A. Piano, pipe-organ, band or orchestral instruments

B. Theory and composition

C. Music Education

A freshman student who has less than a 1.00 (D) grade-point average at the close of his second semester is automatically suspended from the School of Music. A freshman who has less than a 1.5 grade-point average at the close of his second semester is automatically placed on probation for the following semester. The terms of probation will be determined by the Scholarship Committee.

For admission to the Junior year in the School of Music, a student must have established a 2.0 (C) grade-point average.

Transfer students must establish transfer credit from other institutions during the first semester in which they are enrolled in the School of Music.

Before graduation, all candidates for the degree of Bachelor of Music must have four credits in public performances, on the following basis: one credit for each solo performance; one-half credit for each ensemble performance or each accompaniment on piano or organ of major length and difficulty. Three of the four credits must be in solo performance.

All music majors are required to participate not less than 2 clock hours per week in a major performing group.

[1]See Undergraduate Applied Music Requirements (School of Music **Announcements.**)

[2]Not more than 10 hours in Orchestra, Bands, Glee Clubs, and Choruses will be counted towards requirements for graduation. Grade points in excess of 2 hours credit in choral groups will not be counted towards requirements for graduation of students in Music Education with an instrumental emphasis. Grade points in excess of 2 hours credit in Orchestra or Bands will not be counted towards requirements for graduation of students in Music Education with choral emphasis.

UNDERGRADUATE CURRICULA LEADING TO THE DEGREE BACHELOR OF MUSIC

Applied Curriculum

I. WITH A MAJOR IN PIANO

Freshman Year	*First Sem.*	*Second Sem.*	*Course Description*
M. 150, Piano	4	4	Piano VII
M. 1, 2	4	4	First-year theory
M. 102 or M. 105	1	1	Musical organization
English 1, 2	3	3	Composition and rhetoric
Humanities 1, 2	4	4	
Phys. Educ.	1	1	
Mil. or Air Sci. 1, 2 (Men)	2	2	

Women 34 hr.
Men 38 hr.

Sophomore Year			
M. 150, Piano	4	4	Piano VIII
M. 3, 4	4	4	Second-year theory
M. 140, 141	3	3	History of music
M. 102 or M. 105	1	1	Univ. Chorus; Univ. Choir
M. 155	1	1	Chamber music
English elective	3	3	English 18; 3, 4, 5, or 6
Phys. Educ. (Women)	1	1	
Mil. or Air Sci. 3, 4 (Men)	2	2	

Women 34 hr.
Men 38 hr.

Junior Year			
M. 150, Piano	4	4	Piano IX
M. 107, 280	3	2	Form; Opera Survey
M. 102 or M. 105	1	1	Univ. Chorus; Univ. Choir
M. 155	1	1	Chamber music
M. 218, 219	1	1	Methods and pedagogy
M. 109, 110	2	2	Intro. Counterpoint; Ctrpt.
Elective	2	2	Music
Elective	3	3	Academic

Women 33 hr.
Men 33 hr.

Senior Year			
M. 150, Piano	4	4	Piano X
M. 155	1	1	Chamber Music
M. 220, 221	1	1	Repertoire
M. 199	_	2	Recital
M. 102 or M. 105	1	1	Univ. Chorus; Univ. Choir
Elective	4	4	Music
Elective	3	3	Academic

Women 30 hr.
Men 30 hr.

Total 131 hr. (Women)

137 hr. (Men)

II. WITH A MAJOR IN ORGAN

Freshman Year	*First Sem.*	*Second Sem.*	*Course Description*
M. 150, Organ	4	4	Organ I-IV
M. 150, Piano	2	2	Piano V
M. 1, 2	4	4	First-year theory
M. 102 or M. 105	1	1	Univ. Chorus; Univ. Choir
English 1, 2	3	3	Composition and rhetoric
Humanities 1, 2	4	4	
Phys. Educ.	1	1	
Mil. or Air Sci. 1, 2 (Men)	2	2	

Women 38 hr.
Men 42 hr.

Sophomore Year			
M. 150 Organ	4	4	Organ V-VI
M. 150, Piano	2	2	Piano VI
M. 3, 4	4	4	Second-year theory
M. 140, 141	3	3	History of music
M. 102 or M. 105	1	1	Univ. Chorus; Univ. Choir
English elective	3	3	English 18; 3, 4, 5, or 6
Phys. Educ. (Women)	1	1	
Mil. or Air Sci. 3, 4 (Men)	2	2	

Women 36 hr.
Men 38 hr.

Junior Year			
M. 150, Organ	4	4	Organ VII-VIII
M. 183, 280	2	2	Conducting; Opera Survey
M. 232, 233	3	3	Church Music; Liturgies
M. 109, 110	2	2	Intro. Counterpoint; Ctrpt.
M. 218, 219	1	1	Methods and pedagogy
M. 102 or M. 105	1	1	Univ. Chorus; Univ. Choir
Elective	2	2	Music
Foreign Language	3	3	German or Romance language

Women 36 hr.
Men 36 hr.

Senior Year			
M. 150, Organ	4	4	Organ IX-X
M. 102 or M. 105	1	1	Univ. Chorus; Univ. Choir
M. 220, 221	1	1	Repertoire
M. 199	–	2	Recital
M. 231	2	–	Prin. of vocal production
Electives	4	4	Music
Electives	3	3	Academic

Women 30 hr.
Men 30 hr.

Total 140 hr. (Women)
146 hr. (Men)

III. WITH A MAJOR IN FLUTE, OBOE, CLARINET, SAXOPHONE, BASSOON, HORN, TRUMPET, TROMBONE, EUPHONIUM, TUBA, HARP, DOUBLE BASS, OR PERCUSSION

Freshman Year	*First Sem.*	*Second Sem.*	*Course Description*
M. 150, Applied Music	4	4	Instrument VII
M. 1, 2	4	4	First-year theory
M. 150, Piano	2	2	Piano II*
M. 100 or M. 103	1	1	Band; Orchestra
English 1, 2	3	3	Composition and rhetoric
Humanities 1, 2	4	4	
Phys. Educ.	1	1	
Mil. or Air Sci. 1, 2 (Men)	2	2	

Women 38 hr.
Men 42 hr.

Sophomore Year			
M. 150, Applied Music	4	4	Instrument VIII
M. 150, Piano	2	2	Piano III
M. 3, 4	4	4	Second-year theory
M. 140, 141	3	3	History of music
M. 100 or M. 103	1	1	Band; Orchestra
English elective	3	3	English 18; 3, 4, 5, or 6
Phys. Educ. (Women)	1	1	
Mil. or Air Sci. 3, 4 (Men)	2	2	

Women 36 hr.
Men 38 hr.

Junior Year			
M. 150, Applied Music	4	4	Instrument IX
M. 117; M. 118 or M. 119	2	2	Inst.; Orch. & Band Arr.
M. 218, 219	1	1	Methods and pedagogy
M. 155	1	1	Chamber music
M. 100 or M. 103	1	1	Band; Orchestra
M. 109, 110	2	2	Intro. Counterpoint; Ctrpt.
Elective	2	2	Music
Elective	3	3	Academic

Women 32 hr.
Men 32 hr.

Senior Year			
M. 150, Applied Music	4	4	Instrument X
M. 281, 199	2	2	Survey Symp. M.; Recital
M. 220, 221	1	1	Repertoire
M. 155	1	1	Chamber music
M. 100 or M. 103	1	1	Band; Orchestra
Elective	2	2	Music
Elective	3	3	Academic

Women 28 hr.
Men 28 hr.

Total 134 hr. (Women)
140 hr. (Men)

*Any student who does not meet the requirement for Piano II will be placed in a class appropriate to his level of ability. Such students must complete Piano III prior to graduation.

IV. WITH A MAJOR IN VIOLIN, VIOLA, OR VIOLONCELLO

Freshman Year	*First Sem.*	*Second Sem.*	*Course Description*
M. 150, Applied Music	4	4	Instrument VII
M. 150, Piano	2	2	Piano II*
M. 1, 2	4	4	First-year theory
M. 195	1	1	Viola class (violinists only)
M. 103	1	1	Orchestra
English 1, 2	3	3	Composition and rhetoric
Humanities 1	4	4	
Phys. Educ.	1	1	
Mil. or Air Sci. 1, 2 (Men)	2	2	

Women 40 hr.
Men 44 hr.

Sophomore Year			
M. 150, Applied Music	4	4	Instrument VIII
M. 150, Piano	2	2	Piano III
M. 3, 4	4	4	Second-year theory
M. 140, 141	3	3	History of music
M. 103	1	1	Orchestra
English elective	3	3	English 18; 3, 4, 5, or 6
Phys. Educ.	1	1	
Mil. or Air Sci. 3, 4 (Men)	2	2	

Women 36 hr.
Men 38 hr.

Junior Year			
M. 150, Applied Music	4	4	Instrument IX
M. 117, 118	2	2	Instrumentation; Orchestration
M. 218, 219	1	1	Methods and pedagogy
M. 155	1	1	Chamber music
M. 103	1	1	Orchestra
M. 109, 110	2	2	Intro. Counterpoint Ctrpt.
Elective	2	2	Music
Elective	3	3	Academic

Women 32 hr.
Men 32 hr.

Senior Year			
M. 150, Applied Music	4	4	Instrument
M. 281, 199	2	2	Survey Sym. M.; Recital
M. 220, 221	1	1	Repertoire
M. 155	1	1	Chamber music
M. 103	1	1	Orchestra
M. 90	1	1	String bass class ('cellists only)
Elective	2	2	Music
Elective	3	3	Academic

Women 30 hr.
Men 30 hr.

Total 138 hr. (Women)
144 hr. (Men)

*Any student who does not meet the requirement for Piano II will be placed in a class appropriate to his level of ability. Such students must complete Piano III prior to graduation.

V. WITH A MAJOR IN VOICE

Freshman Year	*First Sem.*	*Second Sem.*	*Course Description*
M. 150, Voice	4	4	Voice I, II
M. 150, Piano	2	2	Piano II*
M. 1, 2	4	4	First-year theory
M. 102 or 105	1	1	Choral Union; Univ. Choir
English 1, 2	3	3	Composition and rhetoric
Language	3	3	Italian, French, German[1]
Phys. Educ.	1	1	
Mil. or Air Sci. 1, 2 (Men)	2	2	

Women 36 hr.
Men 40 hr.

Sophomore Year			
M. 150, Voice	4	4	Voice III, IV
M. 150, Piano	2	2	Piano III
M. 3, 4	4	4	Second-year theory
M. 140, 141	3	3	History of music
M. 102 or M. 105	1	1	Choral Union or Univ. Choir
Language	3	3	Italian, French, German
Phys. Educ.	1	1	
Mil. or Air Sci. 3, 4 (Men)	2	2	

Women 36 hr.
Men 38 hr.

Junior Year			
M. 150, Voice	4	4	Voice V, VI
M. 20	2	2	Intro. Opera theatre
M. 109, 110	2	2	Intro. Counterpoint; Ctrpt.
M. 102 or M. 105	1	1	Choral Union or Univ. Choir
Elective	2	2	Music
Language	3	3	Italian, French, German
English elective	3	3	English 18; 3, 4, 5, or 6

Women 34 hr.
Men 34 hr.

Senior Year			
M. 150, Voice	4	4	Voice VII, VIII
M. 210	2	2	Opera theatre
M. 218, 219	1	1	Methods and pedagogy
M. 199	_	2	Recital
M. 280	2	_	Survey Operatic music
M. 120	_	2	Choral arranging
M. 102 or M. 105	1	1	Choral Union or Univ. Choir
M. 220, 221	1	1	Repertoire
Elective	2	2	Music

Women 28 hr.
Men 28 hr.

Total 134 hr. (Women)
140 hr. (Men)

[1]One year each of Italian, French, German.
*See footnote, page 397.

THEORY AND COMPOSITION CURRICULUM

Freshman Year	*First Sem.*	*Second Sem.*	*Course Description*
M. 150	4	4	Applied music*
M. 1, 2	4	4	First-year theory
M. 100, 102, 103, 105, or 155	1	1	Musical organization**
English 1, 2	3	3	Composition and rhetoric
Humanities 1, 2	4	4	
Phys. Educ.	1	1	
Mil. or Air Sci. 1, 2 (Men)	2	2	

Women 34 hr.
Men 38 hr.

Sophomore Year			
M. 150	4	4	Applied music
M. 3, 4	4	4	Second-year theory
M. 113, 114	2	2	Intro. Comp.; Composition
M. 140, 141	3	3	History of music
M. 100, 102, 103, 105, or 155	1	1	Musical organization
English elective	3	3	English 18; 3, 4, 5, or 6
Phys. Educ. (Women)	1	1	
Mil. or Air Sci. 3, 4 (Men)	2	2	

Women 36 hr.
Men 38 hr.

Junior Year			
M. 150	4	4	Applied music
M. 107, 250	3	3	Form, Advanced Harmony
M. 109, 110	2	2	Intro. Counterpoint; Ctrpt.
M. 115, 116	2	2	Composition
M. 117, 118	2	2	Instrumentation; Orchestration
M. 100, 102, 103, 105, or 155	1	1	Musical organization
French, German, or Italian 1, 2	3	3	First-year foreign language

Women 34 hr.
Men 34 hr.

Senior Year			
M. 150	4	4	Applied music
M. 183, 184	2	2	Conducting
M. 186, 198	2	2	Composition, project***
M. 280, 281	2	2	Operatic surv.; Symp surv.
M. 119 or M. 120	2	-	Band or choral arranging
M. 100, 102, 103, 105, and 155	1	1	Musical organization
French, German, or Italian	3	3	Second-year foreign language

Women 30 hr.
Men 30 hr.

Total 134 hr. (Women)
140 hr. (Men)

*Candidates for this degree must complete grade level 7 on their major instrument and grade level 4 in piano.
**At least 4 credit hours must be in a major performing group.
***Major project in theory or composition.

MUSIC EDUCATION CURRICULUM — Choral Emphasis

Freshman Year	*First Sem.*	*Second Sem.*	*Course Description*
M. 150, Applied Major	2	2	Voice I or Keyboard IV
M. 150, Applied Minor	2	2	Voice I or Piano II
M. 84, 85, Applied Class	1	1	String class
M. 1, 2	4	4	First-year theory
M. 102 or M. 105	1	1	Choral Union; Univ. choir
English 1, 2	3	3	Composition and rhetoric
Humanities 1, 2	4	4	General humanities[1]
Phys. Educ.	1	1	
Mil. or Air Sci. 1, 2 (Men)	2	2	
	Women 36 hr.		
	Men 40 hr.		
Sophomore Year			
M. 150, Applied Major	2	2	Voice II or Keyboard V
M. 150, Applied Minor	2	2	Voice II or Piano III
M. 3, 4	4	4	Second-year theory
M. 140, 141	3	3	History of music
M. 102 or M. 105	1	1	Choral Union; Univ. choir
Soc. Sci. 1, 2	4	4	Introductory general course
Educ. 105, 106	3	3	Human growth and development
Phys. Educ. (Women)	1	1	
Mil. or Air Sci. 3, 4 (Men)	2	2	
	Women 40 hr.		
	Men 42 hr.		
junior Year			
M. 150, Applied Major	2	2	Voice III or Piano VI
M. 80, 81 or 82, 83, Applied Class	1	1	Woodwind or Brass class
M. 181, 182	3	3	Mus. Educ. elem; Mus. Educ. sec.
M. 183, 184	2	2	Conducting
M. 120	—	2	Choral arranging
M. 102 or M. 105	1	1	Choral Union; Univ. choir
Biol. or Phys. Sci. 1, 2	4	4	Gen. Biol; intro. gen. course
Health Ed. 101	2	—	School health program
Art 30	—	2	Appreciation of the fine arts
	Women 32 hr.		
	Men 32 hr.		
Senior Year			
M. 150, Applied Major	2	2	Voice IV or Piano VII
M. 197, Applied Class	1	—	Percussion class
M. 102 or M. 105	1	1	Choral Union; Univ. choir
English 18; 3, 4, 5, or 6	6	—	Adv. written and spoken; Lit.
Educ 115	2	—	Student teaching—elementary
Educ. 130	2	—	Materials and methods—elem.
Educ. 125	—	4	Student teaching—secondary
Educ. 120	—	4	Principles of teaching
Educ. 169	—	2	Materials and methods—sec.
Elective	—	1	Elective
	Women 28 hr.		
	Men 28 hr.		

Total 136 hr. Women
142 hr. Men

[1]With the approval of the adviser, students may take History 1, 2 instead of Humanities 1, 2.

MUSIC EDUCATION CURRICULUM — Instrumental Emphasis

Freshman Year	*First Sem.*	*Second Sem.*	*Course Description*
M. 150, Applied Major	2	2	Major instrument IV
M. 150, Applied Piano	1	1	Piano II (See page 11)
M. 84, 85, Applied Class	1	1	String class
M. 1, 2	4	4	First-year theory
M. 100 or 103	1	1	Band, Orchestra
English 1, 2	3	3	Composition and rhetoric
Humanities 1, 2	4	4	General humanities[1]
Phys. Educ	1	1	
Mil. or Air Sci. 1, 2 (Men)	2	2	
	Women 34 hr. — Men 38 hr.		
Sophomore Year			
M. 150, Applied Major	2	2	Major instrument V
M. 150, Applied Piano	1	1	Piano III
M. 82, 83, Applied Class	1	1	Brass class
M. 3, 4	4	4	Second-year theory
M. 140, 141	3	3	History of music
M. 100, 103, 105	1	1	Band, Orchestra; (Chorus)[2]
Soc. Sci. 1, 2	4	4	Introductory general course
Educ. 105, 106	3	3	Human growth and development
Mil. or Air Sci. 3, 4 (Men)	2	2	
Phys. Educ. (Women)	1	1	
	Women 40 hr. — Men 42 hr.		
Junior Year			
M. 150, Applied Major	2	2	Major instrument VI
M. 150, Applied Voice	1	1	Voice I
M. 80, 81, Applied Class	1	1	Woodwind class
M. 117, 118 or M. 119	2	2	Instn.; Orch. or Band Arr.
M. 181, 182	3	3	Mus. Educ. elem.; Mus. Educ. sec.
M. 183, 184	2	2	Conducting
M. 100, 103, 105	1	1	Band, Orchestra, (Chorus)
Biol. or Phys. Sci. 1, 2	4	4	Gen. Biol; Intro. gen. course
Art 30	_	2	Appreciation of the fine arts
Health Educ. 101	2	_	School health program
	Women 36 hr. — Men 36 hr.		
Senior Year			
M. 150, Applied Major	2	2	Major instrument VII
M. 197, Applied Class	1	_	Percussion class
M. 100, 103, 105	1	1	Band. Orchestra (chorus)
English 18; 3, 4, 5, 6	6	_	Adv. written and spoken; Lit.
Educ. 115	2	_	Student teaching—elementary
Educ. 130	2	_	Materials and methods—elem.
Educ. 125	_	4	Student teaching—secondary
Educ. 120	_	4	Principles of teaching
Educ. 169	_	2	Materials and methods—sec.
Elective	_	1	Elective
	Women 28 hr. — Men 28 hr.		

Total 138 hr. Women
144 hr. Men

[1]With the approval of the adviser, students may take History 1, 2 instead of Humanities 1, 2.

[2]Music Education majors in Instrumental are required to be in a major choral group for at least one year.

The student is responsible for correctly fulfilling all requirements. Each student should review his course requirements both before and after every registration period so that errors or omissions will be detected immediately.

Certification

Students successfully completing the above course of study will qualify for the Professional Certificate, Grades 1-12. This certificate qualifies one to teach music on both elementary and secondary levels.

Students wishing to qualify for a second teaching field at secondary level will satisfy the requirements for the Professional Certificate, Grades 7-12, by completing the requirements of the second teaching field and the following courses in Education: 105, 106, 120, 125, 169, and a 2-hour elective in Secondary Education. (See *Teacher Training Bulletin—Requirements for Certification* for requirements in teaching fields.)

Students desiring to qualify for both types of Professional Certificates will usually need to take additional courses during the Summer Session or in extra semesters.

THREE-YEAR ACCELERATED MUSIC EDUCATION PROGRAM

The following program permits students to complete the Music Education Curriculum in three consecutive full years. Students desiring to enroll in the Three-Year Accelerated Program must be recommended by the Adviser and approved by the Chairman of Music Education and the Dean of the School prior to the student's registration for the first summer term following the completion of this second semester.

Freshmen students entering the University in June who plan to enroll in the Three-Year Accelerated Program will have the advantage of carrying less hours during some semesters, and under certain circumstances, be able to complete the curriculum before the end of the fourth summer.

Inability to follow the prescribed program will automatically terminate the possibility of the student completing the curriculum in the proposed three years.

THREE-YEAR ACCELERATED MUSIC EDUCATION CURRICULUM — Choral Emphasis

First Year	*First Sem.*	*Second Sem.*	*Course Description*
M. 150, Applied Major	2	2	Voice I or Keyboard IV
M. 150, Applied Minor	2	2	Voice I or Piano II
M. 84, 85, Applied Class	1	1	String Class
M. 1, 2	4	4	First-year theory
M. 102 or 105	1	1	Choral Union; Univ. Choir
English 1, 2	3	3	Composition and rhetoric
Humanities 1, 2	4	4	General humanities[1]
Phys. Educ	1	1	
Mil. or Air Sci. 1, 2 (Men)	2	2	
	Women 36 hr.		
	Men 40 hr.		
Summer Session			
M. 150, Applied Major	2	–	Voice II or Keyboard V
Soc. Sci. 1, 2	4	4	Introductory general course
Art 30	–	2	Appreciation of the fine arts
	Women 12 hr.		
	Men 12 hr.		

[1]With the approval of the adviser, students may take History 1, 2 instead of Humanities 1, 2.

Second Year

M. 150, Applied Major	2	2	Voice II, III or Keyboard V, VI
M. 150, Applied Minor	2	2	Voice II or Piano III
M. 80, 81, or 82, 83, Applied Class	1	1	Woodwind or Brass class
M. 3, 4	4	4	Second-year theory
M. 140, 141	3	3	History of music
M. 102 or 105	1	1	Choral Union; Univ. Choir
Biol. or Phys. Sci. 1, 2	4	4	Gen. Biol.; intro. gen. course
Phys. Educ. (Women)	1	1	
Mil. or Air Sci. 3, 4 (Men)	2	2	

Women 40 hr.
Men 42 hr.

Summer Session

M. 150, Applied Major	–	2	Voice III or Keyboard VI
M. 181, 182	3	3	Mus. Ed.—elem; Mus. Ed.—sec.
Educ. 105, 106	3	3	Human growth and development

Women 14 hr.
Men 14 hr.

Third Year

M. 150, Applied Major	2	2	Voice IV or Keyboard VII
M. 197, Applied Class	1	–	Percussion class
M. 102 or M. 105	1	1	Choral Union; Univ. Choir
M. 120	–	2	Choral arranging
English 18; 3, 4, 5, 6	6	–	Adv. written and spoken; Lit.
Educ. 115	2	–	Student teaching—elementary
Educ. 130	2	–	Materials & methods—elementary
Educ. 125	–	4	Student teaching—secondary
Educ. 120	–	4	Principles of teaching
Educ. 169	–	2	Materials and methods—sec.

Women 29 hr.
Men 29 hr.

Summer Session

M. 150, Applied Major	2	–	Voice IV or Keyboard VII
Health Ed. 101	2	–	School health program
Elective	1	–	Elective

Women 5 hr.
Men 5 hr.

Total 136 hr. Women
142 hr. Men

THREE-YEAR ACCELERATED MUSIC EDUCATION CURRICULUM — Instrumental Emphasis

First Year	*First Sem.*	*Second Sem.*	*Course Description*
M. 150, Applied Major	2	2	Major instrument IV
M. 150, Applied Piano	1	1	Piano II
M. 84, 85, Applied Class	1	1	String class
M. 1, 2	4	4	First-year theory
M. 100 or 103, 102	1	1	Band or Orchestra (Chorus)[1]
English 1, 2	3	3	Composition and rhetoric
Humanities 1, 2	4	4	General humanities[2]
Phys. Educ.	1	1	
Mil. or Air Sci. 1, 2 (Men)	2	2	
	Women 34 hr.		
	Men 38 hr.		
Summer Session			
M. 150, Applied Major	2	–	Major instrument V
Soc. Sci. 1, 2	4	4	Introductory general course
Art 30	–	2	Appreciation of the fine arts
	Women 12 hr.		
	Men 12 hr.		
Second Year			
M. 150, Applied Major	2	2	Major instrument V, VI
M. 150, Applied Piano	1	1	Piano III
M. 82, 83, Applied Class	1	1	Brass class
M. 3, 4	4	4	Second-year theory
M. 140, 141	3	3	History of music
M. 100 or 103, 102	2	2	Band or Orchestra (Chorus)[2]
M. 183, 184	2	2	Conducting
Biol. or Phys. Sci. 1, 2	4	4	Gen. Biol.; intro. gen. course
Phys. Educ. (Women)	1	1	
Mil. or Air Sci. 3, 4 (Men)	2	2	
	Women 40 hr.		
	Men 42 hr.		
Summer Session			
M. 150, Applied Voice	1	1	Voice I
M. 181, 182	3	3	Mus. Ed.—elem; Mus. Ed.—sec.
Educ. 105, 106	3	3	Human growth and development
	Women 14 hr.		
	Men 14 hr.		

[1]With the approval of the adviser, students may take History 1, 2 instead of Humanities 1, 2.

[2]M.Ed. majors in instrumental required to be in major choral group at least one year.

Third Year

M. 150, Applied Major	2	2	Major instrument VI, VII
M. 80, 81, Applied Class	1	1	Woodwind class
M. 197, Applied Class	1	_	Percussion class
M. 100 or M. 103	1	1	Band or Orchestra
M. 117, 118 or M. 119	2	2	Instn; orch. or band arr.
English 3, 4, 5, 6	3	_	Literature
Educ. 115	2	_	Student teaching—elem.
Educ. 130	2	_	Materials and methods—elem.
Educ. 125	_	4	Student teaching—secondary
Educ. 120	_	4	Principles of teaching
Educ. 169	_	2	Materials and methods—sec.

Women 30 hr.

Men 30 hr.

Summer Session

English 18	3	_	Adv. written and spoken English
Health Educ. 101	2	_	School health program
M. 150, Applied Major	_	2	Major instrument VII
Elective	_	1	Elective

Women 8 hr.

Men 8 hr.

Total 138 hr. Women

144 hr. Men

OPTIONAL FIVE-YEAR PROGRAM

An optional five-year program has been arranged for students who desire to meet the requirements of majors in both Applied Music and Music Education. Admission to this program is by consent of the faculty. As outlined below, the curriculum leads to the Professional Certificate, Grades 1-12.

COMBINED APPLIED MUSIC EDUCATION CURRICULUM

First Year	*First Sem.*	*Second Sem.*	*Course Description*
M. 150, Applied Music	6	6	Major, minor or other
M. 1, 2	4	4	First-year theory
M. 100 to 105	1	1	Band, orchestra, choral
English 1, 2	3	3	Composition and rhetoric
Humanities 1, 2	4	4	General humanities
Phys. Educ.	1	1	
Mil. or Air Sci. 1, 2 (Men)	2	2	

Women 38 hr.

Men 42 hr.

Second Year

M. 150, Applied Music	6	6	Major, minor or other
M. 84, 85, Applied Class	1	1	String class
M. 3, 4	4	4	Second-year theory
M. 140, 141	3	3	History of music
M. 100 to 105	1	1	Band, orchestra, choral
Soc. Sci. 1, 2	4	4	Introductory general course
Phys. Educ. (Women)	1	1	
Mil. or Air Sci. 1, 2 (Men)	2	2	

Women 40 hr.

Men 42 hr.

Third Year

M. 150, Applied Music	6	6	Major, minor or other
M. 82, 83, Applied Class	1	1	Brass class
M. 218, 219	2	2	Methods and pedagogy
M. 117 to 120	2	2	Instn., Orch.-Band.-Choral Arr.
M. 183, 184	2	2	Conducting
M. 100 to 105	1	1	Band, orchestra, choral
Biol. or Phys. Sci. 1, 2	4	4	Gen. biol.; intro. gen. course
English 18; 3, 4, 5, 6	3	3	Adv. written and spoken; Lit.

Women 42 hr.

Men 42 hr.

Fourth Year

M. 150, Applied Major	4	4	Applied major
M. 80, 81, Applied Class	1	1	Woodwind class
M. 109, 110	2	2	Intro. counterpoint; Ctrpt.
M. 181, 182	3	3	Mus. Ed.—elem.; Mus. Ed.—sec.
M. 100 to 105	1	1	Band, orchestra, choral
M. 105, 106	3	3	Human growth and development
Health Ed. 101	2	_	School health program
Art 30	_	2	Appreciation of the fine arts

Women 32 hr.

Men 32 hr.

Fifth Year

M. 150, Applied Major	4	4	Major, minor or other
M. 197, Applied Class	1	_	Percussion class
M. 220, 221	1	1	Repertoire
M. 100 to 105	1	1	Band, orchestra, choral
M. 199	_	2	Recital
Educ. 115	_	2	Student teaching—elementary
Educ. 130	_	2	Materials and methods—elem.
Educ. 125	4	_	Student teaching—secondary
Educ. 120	4	_	Principles of teaching
Educ. 169	2	_	Materials and methods—sec.
Elective	_	2	Elective

Women 31 hr.

Men 31 hr.

Total 183 hr. Women

189 hr. Men

The numerous possible combinations of Applied Music with Music Education cannot be listed separately in this bulletin. When the student becomes a candidate for this degree, his adviser designates the specific courses which must be taken in order to satisfy the requirements for both Applied Music and Music Education. The student can become a candidate for this degree only by consent of the faculty. By attending summer sessions, it may be possible to complete the combined curriculum in four years.

COURSES OF INSTRUCTION

0. Theory. I. 0 hr. A course designed to prepare students for M. 1, Theory. Staff

1. Theory. I. 4 hr. Thorough training in the melodic, harmonic and rhythmic elements of music. Triads, intervals, keys, scales, cadences, notation, rhythmic reading, sight singing, melodic and harmonic dictation. Keyboard harmony stressed. Staff

2. Theory. II. 4 hr. PR: Music 1. Continuation of the melodic and harmonic dictation. Seventh chords, modal scales, key relationships, modulation, transposition by clef, and the study of four-part writing. Special drills in keyboard harmony. Staff

3. Theory. I. 4 hr. PR: Music 1, 2. Study of the harmonic technique of the 18th and 19th centuries. Melodic and harmonic dictation, four-part writing, modulation, altered chords, chorale harmonization, keyboard harmony. Staff

4. Theory. II. 4 hr. PR: Music 1, 2, 3. Continuation of Theory 3 drills. Dictation of chorals. Contrapuntal technique of the 18th century. Keyboard harmony. Staff

5. Remedial Theory. I, II. No Credit. A course for graduate students who are deficient in undergraduate theory requirements. Mr. Wood

10. Music in Human Relations. I, II. 2 hr. A course designed to supply a foundational, cultural, musical background to a clearer understanding of music as a daily living experience. Lectures, demonstrations, concerts, recordings. Not open to music majors. Staff

11. Music as an Art and Science. I, II. 2 hr. PR: Music 10 or its equivalent. Music in the elementary school curriculum. Music methods and materials for teachers in the first three grades. Two recitation periods and one laboratory period per week. Not open to music majors. Miss Scott

12. Music Materials and Procedures. I, II. 2 hr. PR: Music 11 or its equivalent. Continuation of Music 11. Methods and materials for teachers in upper grades. Criteria for utilization of notational elements. Two recitation periods and one laboratory period per week. Not open to music majors. Miss Scott

20. Introduction to Opera Theatre. I, II. 2 hr. Maximum credit 8 hr. PR: Consent. Practical work in all aspects of Lyric Theatre production. Development of lyric theatre stage technique through movement studies, performance in minor roles, and operatic scenes. Mr. Golz

77. Enjoyment of Music. I. 1 hr. A non-technical course dealing with the elements of music—rhythm, timbre, form, harmony, melody. Not open to music majors. Mr. Wood

78. Enjoyment of Music. II. 1 hr. Continuation of Music 77. Not open to music majors. Mr. Wood

107. Analysis of Musical Form. I. 3 hr. PR: Music 4. A detailed study of the structure of music. Mr. Engberg

109. Introductory Counterpoint. I. 2 hr. A course in 16th century polyphony. A brief survey of the history of style in 16th century choral music. Students compose original melodies, and two- and three-part compositions. Mr. Lefkoff

110. Counterpoint. II. 2 hr. PR: Music 109. A study of 18th century counterpoint. Students compose inventions and fugues. Mr. Lefkoff

113. Introductory Composition. I. 2 hr. PR: Music 4 or consent. Original creative writing in the smaller forms. Mr. Graves

114. Composition. II. 2 hr. PR: Music 113 or consent. Continuation of Music 113. Mr. Graves

115. Composition. I. 2 hr. PR: Music 114 or consent. Mr. Graves

116. Composition. II. 2 hr. PR: Music 115 or consent. Mr. Graves

117. Instrumentation. I. 2 hr. PR: Music 2. Study of the characteristics of band and orchestral instruments and their use in scoring. Mr. Wood

118. Orchestration. II. 2 hr. PR: Music 117. Problems in scoring for orchestral ensembles. Mr. Wood

119. Band Arranging. II. 2 hr. PR: Music 117. Problems in scoring for concert and marching bands. Mr. Intravaia

120. Choral Arranging. II. 2 hr. PR: Music 1, 2. A study of the characteristics and problems in scoring for choral combinations. Mr. Graves

140. History of Music. I. 3 hr. Survey of music history from the pre-Christian era to the end of the baroque period. Mr. Kirby

141. History of Music. II. 3 hr. PR: Music 140. Continuation of M. 140, including the classic, romantic, and modern periods. Mr. Kirby

150. Applied Music. I, II. 1-4 hr. Open to qualified students in any field in Applied Music. Course number may be repeated as many times as necessary or desirable. Credit given at the following rates:

1. For music majors, two hours for each 30-minute weekly lesson.
2. For other students, a maximum of one 30-minute lesson per week at one hour of credit.
3. Students in lower grade levels of Applied Music may be grouped in small classes for initial instruction. 1-2 hr. credit. Staff

153. Accompanying. I, II. 1 hr. This course furnishes opportunity to acquire the art of accompanying vocal and instrumental solos. Course number may be repeated as many times as necessary or desirable. Staff

155. Chamber Music. I, II. 0 or 1 hr. Open to pianists and string and wind instrument players. Course number may be repeated as many times as necessary or desirable. Staff

181. Music Education. I. 3 hr. Essentials of Music Education in the Elementary Grades. Miss Scott

182. Music Education. II. 3 hr. Essentials of Music Education in junior and senior high school. Mr. Brown

183. Conducting. I. 2 hr. A basic course in conducting techniques, both choral and instrumental. Mr. Brown

184. Conducting. II. 2 hr. PR: M. 183. Continuation of Music 183, including more advanced score reading and conducting techniques, both choral and instrumental. Mr. Brown

186. Composition. I. 2 hr. PR: Music 116. Staff

187. Composition. II. 2 hr. PR: Music 186. Staff

198. Major Project in Composition or Theory. 2 hr. PR: Music 4. Staff

199. Graduation Recital. I, II. 0 or 2 hr. Required for degree in Applied Music. Staff

200. Band, Orchestra, Choral, Opera Theatre, and Music Education Clinics. 2 hr. Special problems of organization and development of the various performing organizations. Lecture, laboratory and discussion groups. Staff

201. Music in the Elementary School. I, II. 2 hr. PR: Music 10, 11, 12, or consent. Development of skills, procedures, techniques, and materials used by the general classroom teacher of music in grades 1-8. Not open to music majors. Miss Scott

210. Opera Theatre. I, II. 2 hr. Maximum credit 8 hr. PR: Music 20 or consent. Continuation of Music 20. Performance of major roles and advanced production techniques. Qualified students will undertake production-direction projects under supervision. Mr. Golz

218. Methods and Pedagogy in Major Applied Fields. I. 1 hr. PR: Music 150. Staff

219. Methods and Pedagogy in Major Applied Fields. II. 1 hr. PR: Music 218. Staff

220. Repertoire. I. 1 hr. Staff

221. Repertoire. II. 1 hr. Staff

231. Principles of Vocal Production. I. 2 hr. Class lessons in voice stressing the fundamentals of voice production and pedagogy. Staff

232. Church Music. I. 3 hr. PR: Music 140-141 or equivalent. A study of hymnology, anthems, cantatas, and oratorios appropriate to the liturgical year. Mr. English

233. Liturgies. II. 3 hr. PR: Music 232. A historical study of Jewish, Roman Catholic, and Protestant liturgies. Mr. English

246. Music in the Junior High School. I. 2 hr. PR: Music 185. A consideration of the potentialities and special needs of the junior high school in music education; programs, procedures, and materials. Mr. Brown

250. Advanced Harmony. II. 3 hr. PR: Music 4 or consent. A course in the harmonic practice of Romantic and Twentieth Century composers with particular emphasis on analysis of harmonic usage and creative writing. Mr. Graves

280. Survey of Operatic Music. II. 2 hr. PR: Music 107. Mr. Schafer

281. Survey of Symphonic Music. I. 2 hr. PR: Music 107. Mr. Schafer

282. Studies in Contemporary Music. II. 2 hr. Mr. Schafer

283. Survey of Chamber Music. I. 2 hr. PR: Music 107. Mr. Schafer

284. Collegium Musicum, I, II. 0-2 hr. PR: Music 140 and consent. Mr. Kirby

BEGINNING APPLIED CLASSES

80. Woodwind Class. I. 1 hr. Staff

81. Woodwind Class. II. 1 hr. Staff

82. Brass Class. I. 1 hr. Staff

83. Brass Class. II. 1 hr. Staff

84. String Class. I. 1 hr. Staff

85. String Class. II. 1 hr. Staff

194. Viola Class (for violinists only). I. 1 hr. Staff

195. Viola Class (for violinists only). II. 1 hr. Staff

197. Percussion Class. I, II. 1 hr. Mr. Faini

ORGANIZATIONS

100. Band. 0 to 1 hr. Mr. Intravaia

102. University Choral Union. 0 or 1 hr. Mr. Golz

103. University-Community Symphony Orchestra. 0 or 1 hr. Mr. Portnoy

105. University Choir. 0 to 1 hr. Mr. Golz

APPLIED MUSIC

300. Applied Music. I, II. 1-4 hr. Open to qualified students in any field in Applied Music. Course number may be repeated as many times as necessary or desirable. Credit given at the following rates:

1. A maximum of one 30-minute lesson per week at one hour of credit for a beginning student.

2. Full credit of two hours for each 30-minute weekly lesson will be given if a student had the equivalent of three semesters' work in the instrument. This level will be determined by the transcript of the student's undergraduate record or by audition during the regular auditions held beginning three days prior to the general registration period of the University.

3. Students other than music majors may take a maximum of one 30-minute lesson per week at one hour credit. Staff

CONDUCTING

310. Conducting. I. 3 hr. PR: Music 183 or equiv. A graduate course in instrument and choral conducting. Major works are prepared and conducted through the use of recordings and the large University music organizations. Staff

311. Conducting. II. 3 hr. PR: Music 310. Continuation of Music 310. Staff

LITERATURE

220. Repertoire. I. 1 hr. Staff

221. Repertoire. II. 1 hr. Staff

280. Survey of Operatic Music. II. 2 hr. PR: Music 107. Mr. Schafer

281. Survey of Symphony Music. I. 2 hr. PR: Music 107. Mr. Schafer

282. Studies in Contemporary Music. II. 2 hr. PR: Consent. Mr. Schafer

283. Survey of Chamber Music. I. 2 hr. PR: Music 107. Mr. Schafer

284. Collegium Musicum. I, II. 0-2 hr. PR: Music 140 and consent. Transcription, preparation, and performance of musical works of earlier periods and notation. Mr. Kirby

326. Music Literature Survey. I. 4 hr. PR: Music 140, 141. Intensive study of the history of music, music literature, musical documents, and the philosophies of music theory and aesthetics from Greek Antiquity up to 1750. Mr. Schafer

327. Music Literature Survey. II. 4 hr. PR: Music 140, 141. Continuation of Music 326, covering European music from 1750 to the present and music in America from Colonial times to the present. Mr. Schafer

328. Advanced Seminar in Musicology. I, II. 4 hr. PR: Music 331 and completion of doctoral qualifying examinations in French and German. Intensive individual investigation and preparation of research papers. Primarily intended for doctoral students in Musicology. Mr. Kirby

529. Advanced Seminar in Musicology. I, II. 4 hr. PR: Music 328. Continuation of Music 328. Mr. Kirby

330. Introduction to Research. I. 3 hr. PR: Music 140-141, or equiv. A study of the field of musical research, with emphasis placed on the technic of research in music history. Mr. Kirby

331. Seminar in Musicology. II. 3 hr. PR: Music 330. Musical research and investigation. Special fields of study will be selected for each term and individual projects undertaken. Course may be repeated for credit. Mr. Kirby

332. Music in the Middle Ages. I. 3 hr. PR: 12 hr. of Music History and Literature. A detailed study of the music and musical practice from the beginning of the Christian era to 1400. Mr. Schafer

333. Music in the Renaissance. II. 3 hr. PR: 12 hr. of Music History and Literature. Continuation of Music 332 through the 16th century. Mr. Schafer

336. Music in the Baroque Period. I. 3 hr. 12 hr. of Music History and Literature. A detailed study of the music and musical practice of the period from 1600 to 1750. Mr. Schafer

337. Music in the Classic and Romantic Periods. II. 3 hr. PR: 12 hr. of Music History and Literature. Continuation of Music 336 covering the period from 1750 to 1900. Mr. Schafer

338. History of Notation. I. 2 hr. PR: Graduate standing and consent. A detailed study in transcribing the musical manuscripts of the Middle Ages. Mr. Kirby

339. History of Notation. II. 2 hr. PR: Graduate standing and consent. Continuation of Music 338, covering the Renaissance Period. Mr. Kirby

CHURCH MUSIC

231. Principles of Vocal Production. I. 2 hr. Class lessons in voice stressing the fundamentals of voice production and pedagogy. Staff

232. Church Music. I. 3 hr. PR: Music 140-141 or equiv. A study of hymnology, anthems, canatas, and oratorios appropriate to the liturgical year. Mr. English

233. Liturgies. II. 3 hr. PR: Music 232. A historical study of Jewish, Catholic, and Protestant liturgies. Mr. English

334. Choir Seminar. I. 2 hr. PR: Music 183. Development of a choir in a church for a period of two semesters, culminating in a performance of a program of sacred music. Mr. English

335. Choir Seminar. II. 2 hr. PR: Music 334. Continuation of Music 334. Mr. English

MUSIC EDUCATION

200. Band, Orchestra, Choral, Opera Theatre, and Music Education Clinics. 2 hr. Special problems of organization and development of the various performing organizations. Lecture, laboratory and discussion groups. Staff

201. Music in the Elementary School. I, II. 2 hr. PR: Music 10, 11, 12, or consent. Development of skills, procedures, techniques and materials used by the general classroom teacher of music in grades 1-8. Not open to music majors. Miss Scott

246. Music in the Junior High School. I. 2 hr. PR: Music 185. A consideration of the potentialities and special needs of the junior high school in music education; programs, procedures and materials. Mr. Brown

340. Choral Techniques. I. 3 hr. PR: Music 182 or equiv. Study and practice in the development of choral groups. Mr. Brown

342. Instrumental Techniques. II. 3 hr. PR: Music 181 or equiv. Study and practice in the development of instrumental groups. Mr. Intravaia

344. Music Education. II. 3 hr. PR: Music 185 or equiv. Survey and critical study of the total music education curriculum. Mr. Brown

345. The Supervision of Music. II. 2 hr. PR: Music 185. Problems in the supervision of music in the elementary grades and in junior high school. Mr. Brown

346. Introduction to Research in Music Education. I. 3 hr. PR: Music 344. Discussion and independent research problems in the general field of Music Education. Research report required. Mr. Horacek

347. Seminar in Music Education. I. 4 hr. PR: Music 344. Extensive individual reading and reports on the history, philosophy, and aims of music education in the university, college, conservatory, and public schools. Mr. Horacek

348. Seminar in Music Education. II. 4 hr. PR: Music 347. Continuation of Music 347. Emphasis on the curriculum, organization, and administration of the total music education program. Mr. Horacek

349. Psychology of Music. I. 3 hr. PR: Graduate status. The science and physics of sound as applied to music and a study of the psychological difference in music and hearing. Mr. Horacek

350. Psychology of Music. II. 3 hr. PR: Music 349. A continuation of Music 349 with special attention to criticism and evaluation of existing sensory, motor, feeling, and achievement tests in music, as well as developing new tests on elements which make up the musical mind. Mr. Horacek

351. Music in Society. I. 2 hr. PR: Graduate status and consent. The function throughout history of music in society; the relation between social factors and musical practice. Mr. Horacek

352. Aesthetics of Music. II. 2 hr. PR: Graduate status and consent. An examination of the main classical and contemporary aesthetic theories and their applications to music. Mr. Horacek

OPERA

210. Opera Theatre. I, II. 2 hr. Maximum credit 8 hr. PR: Music 20 or consent. Continuation of Music 20. Performance of major roles and advanced production techniques. Qualified students will undertake production-direction projects under supervision. Mr. Golz

THEORY AND COMPOSITION

250. Advanced Harmony. II. 3 hr. PR: Music 4 or consent. A course in the harmonic practice of Romantic and 20th century composers with particular emphasis on analysis of harmonic usage and creative writing. Mr. Graves

360. Composition. I, II. 3 hr. PR: Consent. A course primarily for candidates for the graduate degrees in Theory or Composition. Mr. Graves

361. Composition. I, II. 3 hr. PR: Music 360. Continuation of Music 360. Mr. Graves

362. Composition. I, II. 3 hr. PR: Music 361. Continuation of Music 361. Mr. Graves

363. Composition. I, II. 3 hr. PR: Music 362. Continuation of Music 362. Mr. Graves

365. Counterpoint. I. 2 hr. PR: Music 110 or equiv. A graduate course in 16th century counterpoint. Mr. Lefkoff

366. Counterpoint. II. 2 hr. PR: Music 365. Continuation of Music 365. Mr. Lefkoff

367. Style Survey. I. 3 hr. PR: Music 140, 141 or equiv. An analytical study of musical styles from early Gregorian chant to the 16th century. Mr. Lefkoff

368. Style Survey. II. 3 hr. PR: Music 367. An analytical study of musical styles from the 16th century to the mid-19th century. Mr. Lefkoff

369. Research. I, II. 2 hr. PR: Music 232, 330, 334, or 365, and consent. Independent research projects in Theory, Music History, Music Education, or Church Music. Staff

370. Orchestration. I. 3 hr. PR: Music 118 or equiv. Major projects in the orchestration of original or pre-existing works. Mr. Graves

371. Orchestration. II. 3 hr. PR: Music 370. Continuation of Music 370. Mr. Graves

372. Band Arranging. II. 3 hr. PR: Music 119 or equiv. Major projects in arranging for the concert band. Mr. Intravaia

375. Pedagogy of Theory. I. 2 hr. PR: A strong undergraduate background in theory. An analysis of various approaches to the problems involved in the teaching of theory. Lectures, observations, and practice teaching. Mr. Lefkoff

376. Pedagogy of Theory. II. 2 hr. PR: Music 375. Continuation of Music 375. Mr. Lefkoff

377. Composition Seminar. I, II. 4 hr. PR: Music 361 and consent. Work in larger compositional problems and examination of technical features in works of recognized composers. Primarily intended for doctoral candidates in composition. Mr. Graves

378. Composition Seminar. I, II. 4 hr. PR: Music 377. Continuation of Music 377. Mr. Graves

379. 18th Century Counterpoint. II. 2 hr. PR: Graduate standing and consent. A graduate course in 18th century Counterpoint. Mr. Lefkoff

380. 16th Century Counterpoint. I. 2 hr. PR: Music 366. A study of the secular style of the 16th century madrigal and chanson. Mr. Lefkoff

381. Style Survey. I. 3 hr. PR: Music 368. An analytical study of musical styles of the late 19th century and early 20th century. Mr. Lefkoff

382. Style Survey. II. 3 hr. PR: Music 381. An analytical study of 20th century music with emphasis on serial techniques and contemporary trends. Mr. Lefkoff

383. Theory Seminar. I, II. 4 hr. PR: Music 382. Intensive reading, discussion, and individual reports on the history of music theory and style analysis of all periods. Primarily intended for doctoral candidates in Theory. Mr. Lefkoff

384. Theory Seminar. I, II. 4 hr. PR: Music 383. Continuation of Music 383. Mr. Lefkoff

THESIS OR RECITAL

395. Dissertational Guidance. I, II. 1-8 hr. Credit not to be applied toward the 70-hour minimum for the Ph.D. or Ed.D. Staff

396. Two Lecture Recitals. 1-4 hr. For History of Music Majors only. Staff

397. Recital. 2 hr. For Music Education Majors only. Staff

398. Recital. 1-4 hr. PR: Music 199 or equiv. Staff

399. Thesis. 1-4 hr. Staff

EXTENSION DIVISION

288. Music Education. I. 3 hr. PR: Consent. A study of the fundamentals of music, and the procedures and materials used in teaching music in the elementary classroom. Credit for this course will satisfy only First Class Certificate renewal or an elective on a degree which permits open electives. Cannot be used to renew an emergency certificate of any type. Offered only in the Extension Division. Not open to Music Majors. Miss Scott

289. Music Education. II. 3 hr. PR: Music 288. Continuation of Music 288. Credit restrictions for this class are the same as for Music 288. Offered only in the Extension Division. Not open to Music Majors. Miss Scott

290. Choral Conducting and Procedures. I. 3 hr. PR: Consent. The organization and development of school and community choral groups with particular emphasis on conducting techniques, choral music materials and choral teaching procedures. Offered in Extension only. For non-music majors only. Mr. Brown

291. Choral Conducting and Procedures. II. 3 hr. PR: Music 290 or consent. Continuation of Music 290. Offered in Extension only. For non-music majors only. Mr. Brown

292. History and Appreciation of Music. I. 3 hr. PR: Consent. The history and appreciation of music from the Christian era through the Baroque period. Offered in Extension only. For non-music majors only. Mrs. Shehatovich

293. History and Appreciation of Music. II. 3 hr. PR: Music 292 or consent. Continuation of Music 292 including the Classic, Romantic and Modern periods. Offered in Extension only. For non-music majors only. Mrs. Shehatovich

294. Class Piano. I. 2 hr. PR: Consent. Offered in Extension only. For non-music majors only. Mrs. Shehatovich

295. Class Piano. II. 2 hr. PR: Music 294 or consent. Offered in Extension only. For non-music majors only. Mrs. Shehatovich

GRADUATE SCHOOL

Consult the *Announcements* of the School of Music and the *Announcements* of the Graduate School for information concerning graduate programs in the School of Music.

The School of Physical and Health Education, Recreation, and Safety

The Division of Physical Education was established on the campus in 1928 and became the School of Physical Education and Athletics in 1937. The name of the School was changed to The School of Physical and Health Education, Recreation, and Safety in 1960. The purposes of the School are:

1. To conduct a general program of physical education for University students.
2. To provide professional preparation for careers in physical education, athletic coaching, recreation, health education, safety education, and pre-physical therapy.
3. To provide an intramural activities program for students and faculty.

Organization

For purposes of administration and instruction the School of Physical and Health Education, Recreation, and Safety is organized into the following departments:

I. Physical Education for Men
II. Physical Education for Women
III. Recreation
IV. Health Education
V. Safety Education
VI. Intramural Activities

Facilities

The Field House, located on the main campus near the Monongahela River, provides facilities for classes, intramural sports, and intercollegiate athletics (capacity 6,800) and contains the administrative offices of the School of Physical and Health Education, Recreation, and Safety.

Elizabeth Moore Hall, situated on the upper campus, provides social, recreation, and physical education facilities primarily for women students. It also houses the offices of the department of general program for women.

Mountainlair, the student activities center, is located on University Avenue near the Stadium Bridge.

Mountaineer Field is located within the stadium on the north border of the lower campus. It has a seating capacity of 34,800. It provides facilities for intercollegiate football, and track and field events.

The administrative offices of the Department of Intercollegiate Athletics are located in the University end of the stadium.

Outdoor activities for the Physical Education, Intramural Sports, and Intercollegiate Athletics programs are located on the Old Athletic Field, stadium, tennis courts and on the Evansdale Campus off U.S. Route 19, one and one-half miles north of the Field House.

Intramurals

A broad intramural sports program for men and women is provided by the School of Physical and Health Education, Recreation, and Safety. It is the aim of the Intramural Department to encourage all students of the University to participate in organized athletic sports and wholesome active recreation. Competition is promoted between student groups and individuals. Such natural groupings as classes, fraternities, sororities, dormitories, and other nonfraternity units form the basis for activities in competitive sports.

THE GENERAL PROGRAM FOR MEN AND WOMEN*

The general program provides an opportunity for students to develop general physical efficiency, skills in sports, dance, and wholesome health and recreation attitudes. Experiences gained in the program provide a basis for participation in intramural and varsity athletics, as well as on- and off-campus recreation.

The courses are specifically designed to: (a) meet the needs of students for an organized program of instruction, (b) develop physical fitness and skill in physical activity, (c) experience satisfaction and pleasure in participation, (d) aid in promoting better health by establishing habits of regular participation in physical activity, and (e) develop favorable attitudes and appreciation of wholesome recreation and spectator sports as part of present-day living.

Students satisfying the course demands meet the University requirements in Physical Education as a prerequisite for graduation. Those students who are unable to participate in the regular program because of physical handicaps are assigned to the adapted program.

GENERAL PROGRAM COURSES FOR MEN

1. General Program for Men. I. 1 hr. Required of all freshmen in the University (except majors in Physical Education). Students who are found to be physically unable to engage in regular activity will be assigned to an adapted program of physical education recommended by University physicians and under the direction of the Staff of the Department. All other students will be assigned to the regular program of physical education. These students will be grouped for instruction and organized competition in the following activities: conditioning exercises, tumbling and apparatus, wrestling, golf, swimming, and relays. Mr. Tork and Staff

2. General Program for Men. II. 1 hr. Required of all freshmen in the University (except majors in Physical Education). Students in the regular program will be grouped for organized competition in the following activities: conditioning exercises, basketball, bowling, handball, volleyball, tennis, and track and field. Mr. Tork and Staff

GENERAL PROGRAM COURSES FOR WOMEN

General Program for Women. Physical Education 3, Orientation to Physical Education, is required of all freshmen women students in the fall semester.

The student should select one course from each of the following groups to complete the four-hour requirement:

Group 1—Phys. Educ. 14, 15, 16 ..... (Swimming)
Group 2—Phys. Educ. 5, 11, 17, 18 ..... (Dancing)
Group 3—Phys. Educ. 4, 6, 7, 8, 13, 21, 25 ..... (Individual Sports)

3. Orientation in Physical Education. I. 1 hr. Team sports, body mechanics, and dance. Required of all freshman women.
Mrs. Beto, Miss Carruth, Miss Blakemore

4. Golf and Bowling. I, II. 1 hr. Mrs. Pearse

5. Ballroom Dance. I, II. 1 hr. Fundamentals of ballroom dancing. For men and women students. Mrs. Wiedebusch

6. Stunts, Tumbling, and Trampoline. I, II. 1 hr. Staff

7. Archery. I, II. 1 hr. Miss Hurst

8. Recreational Sports. I, II. 1 hr. Badminton, table tennis, deck tennis, shuffleboard. Miss Hurst

*This requirement should be met by the men in their first year of residence and by women in their first two years of residence. Two hours of general program form the requirement for men and four hours for women are required for teacher certification.

9. Team Sports. I. 1 hr. Volleyball and hockey. Mrs. Beto

10. Team Sports. II. 1 hr. Basketball and softball. Mrs. Beto

11. Folk Dancing. I, II. 1 hr. Miss Hurst

13. Tennis and Bowling. I, II. 1 hr. Mrs. Pearse

14. Elementary Swimming and Diving. I, II. 1 hr. Miss Blakemore

15. Intermediate Swimming and Diving. I, II. 1 hr. Miss Blakemore

16. Life Saving and Water Safety. II. 1 hr. (Opportunity to qualify for American Red Cross Senior Life Saving Certificate.) Miss Blakemore

17. Elementary Modern Dance. I, II. 1 hr. Mrs. Wiedebusch

18. Advanced Modern Dance. I, II. 1 hr. PR: Phys. Educ. 17. (Open to Men and Women). Mrs. Wiedebusch

21. Physical Fitness. I, II. 1 hr. Mrs. Beto

25. Fencing. I, II. 1 hr. Staff

Students may select any course from the above groups for which they have not previously received credit.

Physical Education for Elementary Teachers (*Not for P.E. Majors*)

Women students who are planning to teach in elementary grades are required to take the following courses:

41. Physical Education for Elementary Teachers. I. 1 hr. (W).

42. Physical Education for Elementary Teachers. II. 1 hr. (W).

43. Physical Education for Elementary Teachers. I, II. 2 hr.

Men students who are planning to teach in elementary grades are required to take the following courses:

1. General Program for Men. I. 1 hr.

2. General Program for Men. II. 1 hr.

43. Physical Education for Elementary Teachers. I, II. 2 hr.

Camp Counselor Recommendations

To be eligible for recommendation by the School of Physical and Health Education, Recreation, and Safety as camp counselors, students majoring in Physical Education or Recreation must have completed Rec. 1, 5, 11, 12, 102, and 107. Other students must complete, in addition to the courses listed for majors in Physical Education and Recreation, four credit hours in activity courses in Physical Education, including Phys. Educ. 54 and 66, or equivalents.

REQUIREMENTS FOR DEGREES

The degree of Bachelor of Science in Physical Education or the degree of Bachelor of Science in Recreation may be conferred upon any student who satisfies the entrance requirements and offers 128 hours with an average of "C." Candidates for Physical Education degrees must also meet certain School and departmental requirements.

PHYSICAL EDUCATION: REQUIRED AND ELECTIVE SUBJECTS

Of the 128 hours which are required for the degree of Bachelor of Science in Physical Education, at least 45 hours are required in the School of Physical and Health Education, Recreation, and Safety. The remaining hours must be selected from such courses as may be approved by the adviser. A candidate for a degree is advised to make a selection of one of the teaching combinations on page 418 and to complete the number of semester hours required in each teaching group.

Courses are arranged to meet University requirements for the degree of Bachelor of Science in Physical Education as well as state requirements for teacher certification. The curriculum for the four-year course has been so arranged that consideration is given to various activities which should constitute a well-rounded program of physical education for children and youth. The courses are arranged in ten groups as follows:

A. Required activity courses in Physical Education for men: Phys. Educ. 5, 51, 52, 53, 54, 55, 56, 121, 125, 126, 132, 155, and for women: 5, 31, 32, 33, 35, 54, 61, 63, 66, 130, 131, 132.

B. Required theory courses in Physical Education for both men and women, unless otherwise indicated are: Phys. Educ. 36 (W),* 71, 155 (M),* 175, 176, 177, 180, 191, 278.

C. Required courses in Recreation: Rec. 4.

D. Required courses in Health Education: Health Educ. 2 and 101.

E. Required courses in Safety Education: Safety Educ. 127 (W) and Safety Educ. 181.

F. Required courses in English.

G. Required courses in science which furnish a background for physical education.

H. Required courses in Education which consider the principles of general education.

I. Required courses in social studies.

J. Required courses in Music and Art.

K. Required courses in Military Science and Air Science for men of the University.

L. Elective courses which are taken at the pleasure of the student.

*Courses marked (M) are open to men; courses marked (W) are open to women; all others are open to both men and women.

It is understood that a sound and vigorous body is essential to all students who elect this curriculum. Each student must therefore pass a thorough physical examination before he will be allowed to enroll in this program. Special emphasis is placed upon personal and professional qualifications of the student as well as upon a high standard of scholarship.

Student teaching in physical education is available in the University High School and in the elementary schools of Morgantown. Opportunity is provided also in the High School for practice coaching of high school athletic teams. Assisting in the General Program in physical education is required of all majors.

All students registered in the School of Physical Education must successfully pass a motor ability test before they are permitted to take any activity courses.

All sophomores, juniors, and seniors, physical education majors or pre-physical therapy students, are required to complete fifteen units of field work in projects related to physical education and recreation.

Recommendation for Certification

The prospective teacher who intends to apply for certification for school service in the state should take care to satisfy requirements for other teaching fields and required courses in Education and Physical Education.

Suggested Teaching Combinations for First-class High School Certification

1. Physical education and biological science.
2. Physical education and mathematics.
3. Physical education and social studies.
4. Physical education and English.
5. Physical education and physical and general science.
6. Physical education and physical science.
7. Physical education and biological and general science.
8. Physical education and industrial arts.
9. Other combinations approved by the adviser.

The elementary curriculum will qualify the student to meet certification requirements in physical education, English, social studies, and (by taking Physical Science 2) biological science in the junior high school (grades 7-8).

THE CURRICULUM FOR PHYSICAL EDUCATION MAJORS

Degree: Bachelor of Science in Physical Education

The curriculum for majors is organized to provide professional preparation for men and women who are desirous of becoming teachers of health and physical education in elementary, high schools, and colleges. The courses are arranged to meet the University requirements for the degree of Bachelor of Science in Physical Education, as well as the state requirements for teacher education in secondary and elementary schools.

SECONDARY

Women

FIRST YEAR				SECOND YEAR			
First Sem.	*Hr.*	*Second Sem.*	*Hr.*	*First Sem.*	*Hr.*	*Second Sem.*	*Hr.*
English 1	3	English 2	3	Educ. 105	3	Educ. 106	3
Biol. 1	4	P.E. 36	2	Soc. Sci. 1	4	Soc. Sci. 2	4
Hist. 1	3	Biol. 2	4	English 18	3	P.E. 54	2
Art 30	2	Hist. 2	3	Rec. 4	3	P.E. 66	1
P.E. 31	1	Health Ed. 2	2	P.E. 61	1	English 5 or 6	3
P.E. 35	1	P.E. 32	1	P.E. 63	1	Electives	3
P.E. 71	2	P.E. 33	1	Music 10	2		
P.E. 5	1						
	17		16		17		16

THIRD YEAR				FOURTH YEAR			
First Sem.	*Hr.*	*Second Sem.*	*Hr.*	*First Sem.*	*Hr.*	*Second Sem.*	*Hr.*
Safety Ed. 127	2	Zool. 171	4	P.E. 191	2	P.E. 278	3
P.E. 175	5	P.E. 132	1	*Educ. 120) or	4	*Educ 120) or	4
Safety Ed. 181	2	P.E. 176	2	*Educ. 124) elect.	6	*Educ. 124) elect.	6
Health Ed. 101	2	P.E. 131	1	*Educ. 152)	2	*Educ. 152)	2
P.E. 130	1	P.E. 177	3	Electives	2	Electives	2
Electives	4	P.E. 180	2				
		Electives	4				
	16		17		16		17

*Required of all students desiring certification for teaching.

Men

FIRST YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
English 1	3	English 2	3
Biol. 1	4	Biol. 2	4
Hist. 1	3	Hist. 2	3
Mil. or Air Sci. 1	2	Mil. or Air Sci. 2	2
P.E. 71	2	Health Ed. 2	2
P.E. 51	2	P.E. 53	2
P.E. 5	1	P.E. 52	1
	17		17

SECOND YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
English 5 or 6	3	English 18	3
Soc. Sci. 1	4	Soc. Sci. 2	4
Music 10	2	Art 30	2
P.E. 55	2	P.E. 54	2
Rec. 4	3	P.E. 56	2
Mil. or Air Sci. 3	2	Mil. or Air Sci. 4	2
Electives	2-3	Electives	3
	18-19		18

THIRD YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
Educ. 105	3	Educ. 106	3
P.E. 121	2	P.E. 132	1
P.E. 125	1	Zool. 171	4
Health Ed. 101	2	P.E. 126	1
P.E. 155	2	P.E. 176	2
P.E. 175	5	P.E. 180	2
Safety Ed. 181	2	P.E. 177	3
		Electives	2
	17		18

FOURTH YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
P.E. 191	2	P.E. 278	3
*Educ. 120) or	4	*Educ. 120) or	4
*Educ. 124) elect.	6	*Educ. 124) elect.	6
*Ed. 152)	2	*Educ. 152)	2
Electives	3	Electives	2
	17		17

*Required for those students desiring certification for teaching. May be taken the first or second semester of senior year.

ELEMENTARY

Women

FIRST YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
English 1	3	English 2	3
Biol. 1	4	Biol. 2	4
Hist. 1	3	Hist. 2	3
Art 30	2	Health Ed. 2	2
P. E. 71	2	P. E. 32	1
P. E. 31	1	Math. 6	3
P. E. 5	1	P. E. 33	1
P. E. 35	1		
	17		17

SECOND YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
Educ. 105	3	Educ. 106	3
Soc. Sci. 1	4	Soc. Sci. 2	4
English 18	3	English 5 or 6	3
Hist. 52	3	Hist. 53	3
Music 10	2	P. E. 54	2
Art 1	2	Art 2	2
P. E. 61	1	P. E. 66	1
	18		18

THIRD YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
Phys. Sci. 1	4	P. E. 132	1
P. E. 175	5	P. E. 176	2
Safety Ed. 127	2	P. E. 131	1
Health Ed. 101	2	P. E. 177	3
P. E. 130	1	P. E. 180	2
Music 11	2	Educ. 141	3
P. E. 63	1	Music 12	2
		Speech 3 or 11	3
	17		17

FOURTH YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
P. E. 191	2	P. E. 278	3
For. 140	3	Educ. 146	6
Safety Ed. 181	2	Educ. 142	3
Lib. Sci. 203	3	Educ. 143	2
Geol. 107	3	Educ. 144	2
Elective	3	Educ. 145	2
	16		18

Men

FIRST YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
English 1	3	English 2	3
Biol. 1	4	Biol. 2	4
Hist. 1	3	Hist. 2	3
Mil. or Air Sci. 1	2	Mil. or Air Sci. 2	2
P. E. 71	2	Health Ed. 2	2
P. E. 51	2	P. E. 53	2
P. E. 5	1	P. E. 52	1
	17		17

SECOND YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
English 5 or 6	3	English 18	3
Soc. Sci. 1	4	Soc. Sci. 2	4
Music 10	2	Art 30	2
P. E. 55	2	P. E. 54	2
Mil. or Air Sci. 3	2	P. E. 56	2
Educ. 105	3	Mil. or Air Sci. 4	2
Lib. Sci. 203	3	Educ. 106	3
	19		18

THIRD YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
P. E. 175	5	P. E. 132	1
Safety Ed. 127	2	P. E. 180	2
Music 11	2	P. E. 177	3
Art 1	2	Music 12	2
Hist. 52	3	Art 2	2
Math. 6	3	Hist. 53	3
		P. E. 176	2
		Safety Ed. 181	2
	17		17

FOURTH YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
Phys. Sci. 1	4	P. E. 278	3
Speech 11 or 3	3	Educ. 142	3
For. 140	3	Educ 143	2
Geol. 107	3	Educ. 144	2
Health Ed. 101	2	Educ. 145	2
Educ. 141	3	Educ. 146	6
	18		18

Recreation Minor for Physical Education Majors

For students who, in addition to preparing for physical education as a teaching field, have also the objective of fitting themselves for recreation leadership responsibilities in schools or in recreation programs sponsored by or in conjunction with school systems, a recreation minor is available. Such a minor also will add opportunities for service and increased income in summer recreation programs in communities, industries, or private agencies. Students are required to take the following courses as a minimum:

	Hr.
Rec. 11 (Nature Recreation and Camping)	3
Rec. 12 (Social Recreation)	3
Rec. 102 (Program Planning)	3
Rec. 104 (Functional Planning of Facilities)	3
Rec. 107 (Recreation Leadership and Group Work)	3
Rec. 282 (Recreation Administration)	3
	18

THE CURRICULUM FOR RECREATION MAJORS

Degree: Bachelor of Science in Recreation

The major curriculum in recreation is planned primarily to prepare for professional responsibilities in community recreation systems and services, public and private, in industries, public housing, hospitals, and similar fields.

Of the 130 hours which are required for the degree of Bachelor of Science in Recreation at least 57 hours are required in the School of Physical and Health Education, Recreation, and Safety. The remaining hours must be selected from courses approved by the adviser. It is generally advisable for those entering the recreation profession to prepare themselves in at least one recreation interest area in addition to the physical education activities, by electing as many courses as possible in arts and crafts, or dramatics, or music, or nature recreation.

During the summer between the junior and senior years all Recreation majors are required to do at least eight weeks of supervised recreation leadership field work. The selected agency in which the student will do his work must be approved by the Chairman of the Recreation Department. Arrangements will be made for agency supervision and periodic visitation by the faculty supervisor. Evaluation of reports and observations will be made with the student.

The courses are arranged in 14 groups and meet University requirements for the degree of Bachelor of Science in Recreation:

A. Required courses in Recreation (33).
B. Required courses in Physical Education (W-14) (M-13).
C. Required courses in English and Speech (12).
D. Required courses in Science including P.E. 175 (12).
E. Required courses in Social Studies (6).
F. Required courses in Education (3).
G. Required courses in Social Sciences (15).
H. Required courses in Forestry (W-3) (M-5).
I. Required courses in Health and Safety (6).
J. Required courses in Military Science or Air Science (M-8).
K. Required courses in Art, Drama and Music (10).
L. Required courses in Journalism (3).
M. One summer (at least 8 weeks) supervised field work (Rec. 145).
N. Elective courses: By advisement.

FIRST YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
Biol. 1	4	Art 30 (W)	2
English 1	3	English 2	3
Hist. 1	3	English 5	3
Mil. or Air Sci. 1 (M)	2	Mil. or Air Sci. 2 (M)	2
P.E. 5	1	Music 10 (W)	2
P.E. 31 (W)	1	P.E. 32 (W)	1
P.E. 33 (W)	1	P.E. 52 (M)	1
Rec. 5	2	P.E. 53 (M)	2
		Rec. 1	3
		Rec. 11	3
	Women 15		Women 17
	Men 15		Men 17

SECOND YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
Econ. 1	3	Mil. or Air Sci. 4 (M)	2
English 18	3	Music 10 (M)	2
Mil. or Air Sci. 3 (M)	2	P.E. 36 (W)	2
P.E. 35 (W)	1	P.E. 54	2
P.E. 55 (M)	2	P.E. 56 (M)	2
P.E. 61 (W)	1	P.E. 66 (W)	1
Psych. 1	3	Rec. 102	3
Rec. 12	3	Sociol. 1	3
Speech 11 (W)	3	Speech 11 (M)	3
		Speech 165 (W)	2
		Speech 166 (W)	1
		Electives (W)	2
	Women 17		Women 16
	Men 16		Men 17

THIRD YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
Ed. 105 (or Psych. 122) elect. (W)	3	Ed. 105 (or Psych. 122) elect. (M)	3
Health Ed. 101	2	For. 140	3
P.E. 125 (M)	1	Music 78	1
P.E. 130 (W)	1	P.E. 126 (M)	1
P.E. 175	5	P.E. 131 (W)	1
Rec. 107	3	P.E. 132	1
Safety Ed. 127	2	Rec. 104	3
Speech 165 (M)	2	Rec. 271	3
Speech 166 (M)	1	Electives (W)	4
	Women 16		Women 16
	Men 16		Men 15

FOURTH YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
For. 142 (M)	2	Pol. Sci. 101	3
Journ. 212	3	Rec. 202	3
Rec. 145	3	Rec. 206	3
Rec. 282	3	Sociology (200 level)	3
Rec. 296	3	Electives	3
Safety Ed. 181	2		
Soc. Work Course (200 level)	3		
	Women 17		Women 15
	Men 19		Men 15

ELECTIVES

Art 30 or 130 (Appreciation of the Arts)	2	Soc. Work 230 (History of Social Work)	3
Art 121 (Fundamentals of Design)	3	Soc. Work 260 (Child Welfare)	3
Art 122 (Fundamentals of Design)	3	Soc. Work 285 (Introduction to Public Welfare)	3
Art 127 (Crafts)	3	Sociol. 205 (Urban Sociology)	3
Econ. 115 (Labor Problems)	3	Sociol. 206 (Rural Sociology)	3
Econ. 218 (Collective Bargaining and Labor Relations)	3	Sociol. 208 (The Community)	3
Econ. 241 (Public Finance)	3	Sociol. 210 (Marriage and Family)	3
Educ. 221 (Audio-Visual Resources)	2	Sociol. 211 (Soc. of Childhood)	3
English 5 or 6 (American Literature)	3	Sociol. 220 (Social Change)	3
English 16 (Creative Writing)	3	Sociol. 231 (Race Relations)	3
English 160 (Contemporary Literature)	3	Sociol. 234 (Juvenile Delinquency)	3
Forestry 142 (Rec. Development)	2	Sociol. 235 (Collective Behavior)	3
Home Econ. 133 (Home Crafts)	2	Sociol. 244 (Culture and Personality)	3
Management 216 (Personnel Management)	3	Sociol. 250 (Human Relations in Industry)	3
Philos. 104 (Principles)	3	Sociol. 270 (Group Dynamics)	3
P.E. 225 (Officiating)	2	Speech 3 (Voice and Diction)	3
Psych. 114 (Psych. in Personnel Work)	3	Speech 120 (Group Discussion)	3
Psych. 115 (Psych. in Industry)	3	Speech 125 (Advanced Public Speaking)	3
Psych. 116 (Social Psych.)	3	Speech 161 (Stage Scenery)	3
Psych. 122 (Developmental Psych.)	3	Speech 162 (Play Directing)	3
Psych. 125 (Mental Hygiene)	3	Speech 163 (Stage Lighting	3
Psych. 229 (Abnormal Psych.)	3	Speech 164 (Theatre Workshop)	1-3
Psych. 233 (Problem Children)	3	Speech 200 (Art of Storytelling)	2
Soc. Work 212 (Community Resources)	3	Speech 223 (Advanced Group Discussion)	2
Soc. Work 215 (Psychosocial Growth)	2	Speech 268 (Creative Dynamics)	2
Soc. Work 221 (Field of Social Work)	3	Zool. 265 (Ornithology)	3

The major curriculum in Recreation is planned primarily to prepare for professional recreation responsibilities in community systems and services, public and private, in industry, public housing and similar fields. Recreation majors who wish to be certified to teach physical education should take during the regular four year period, and in whatever additional semesters are necessary, the following courses in addition to those listed in the Recreation curriculum:

Course Number and Title	*Men*	*Women*
Health Ed. 2, Personal and Community Hygiene	2	2
Phys. Ed. 63, Hockey and Volleyball		1
Phys. Ed. 71, Orientation in Physical Education	2	2
Phys. Ed. 121, Athletic Training	2	
Phys. Ed. 176, Adapted Program	2	2
Phys. Ed. 278, Administration of Physical Education	3	3
Zool. 171, Human Physiology	4	4
Education 105, 106, 120, 124, 152, and 109	20	20

Recreation Minor

Those students who are majoring in fields other than physical education may elect to work for a minor in recreation. This will prepare them for leadership responsibility in various types of recreation service such as private agencies and summer programs in communities. Students majoring in Education may prepare themselves for recreation leadership in schools or in recreation programs sponsored by or in conjunction with school systems. The following courses are required for a minor in recreation:

Course Number and Title	*Hr.*
Rec. 1, Introduction to Recreation	3
Rec. 5, Arts and Crafts in Recreation	2
Music 10, Music in Human Relations	2
Rec. 11, Nature Recreation and Camping	3
Rec. 12, Social Recreation	3
Rec. 102, Program Planning	3
Rec. 107, Recreation Leadership	3
Phys. Ed. 54, Individual and Dual Sports	2
Rec. 282, Recreation Administration	3

THE CURRICULUM FOR PRE-PHYSICAL THERAPY STUDENTS

Degree: Bachelor of Science in Physical Education

The following curriculum for pre-physical therapy students is organized to meet the University requirements for the degree of Bachelor of Science in Physical Education as well as satisfying the entrance requirements to physical therapy schools approved by the Council on Medical Education and Hospitals of the American Medical Association.

FIRST YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
English 1	3	English 2	3
Biol. 1	4	Biol. 2	4
Hist. 1	3	Hist. 2	3
P.E. 71	2	Health Ed. 2	2
P.E. 31 (W)	1	P.E. 32 (W)	1
P.E. 35 (W)	1	P.E. 33 (W)	1
P.E. 51 (M)	2	P.E. 36 (W)	2
P.E. 3 (W)	1	P.E. 53 (M)	2
P.E. 5	1	P.E. 52 (M)	1
Mil. or Air Sci. 1	2	Mil. or Air Sci. 2	2
Women	16	Women	16
Men	17	Men	17

SECOND YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
Soc. Sci. 1	4	Soc. Sci. 2	4
Physics 1	4	Psych. 1	3
Rec. 4	3	Art 30	2
Music 10	2	English 5 or 6	3
P.E. 55 (M)	2	P.E. 54	2
P.E. 61 (W)	1	P.E. 56 (M)	2
P.E. 63 (W)	1	Mil. or Air Sci. 4	2
Mil. or Air Sci. 3	2	Electives (W)*	3-5
Elective (W)*	2-3		
Women	17-18	Women	17-19
Men	17	Men	18

THIRD YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
Educ. 105	3	Educ. 106	3
Health Ed. 101	2	Zool. 171	4
Safety Ed. 181	2	P.E. 132	1
P.E. 121 (M)	2	P.E. 180	2
P.E. 125 (M)	1	P.E. 126 (M)	1
P.E. 155 (M)	2	P.E. 131 (W)	1
P.E. 130 (W)	1	P.E. 177	3
Safety Ed. 127 (W)	2	Psych. (elective)*	3
Psych. (elective)*	3	Electives*	2-4
Electives (M)*	2-4		
Electives (W)*	2-5		
Women	15-19	Women	15-19
Men	15-19	Men	18

FOURTH YEAR

First Sem.	*Hr.*	*Second Sem.*	*Hr.*
P.E. 191	2	P.E. 278	3
P.E. 175	5	English 18 or 21	3
Sociol. (elective)*	3	P.E. 176	2
Electives*	3-6	Sociol. (elective)*	3
		Speech 11	3
		Electives*	2-5
	16-19		16-19

*Electives should be chosen in accordance with admission requirements of the physical therapy school in which the student expects to enroll. Suggested electives are: Chem. 1, 2; Math. 2, 3, 4; Physics 2; Psych. 116, 122, 125, 218, 222, 236; Soc. 210, 211, 234, 235, 243; Soc. Wk. 212, 221, 260; Zool. 231, 232, 233, 235, 236, 237.

CORRECTIVE THERAPY[1]

West Virginia University, through an affiliation with the Veterans Administration, prepares men and women as corrective therapists for possible employment under civil service regulations in Veterans Administration Hospitals throughout the United States.[2]

Students pursuing certification requirements for a Bachelor of Science Degree in Physical Education can obtain preparation as corrective therapists by completing 240 clock hours of clinical laboratory experience in a general, medical, surgical and/or psychiatric hospital. The laboratory experience is met by completing Physical Education 276, Residency in Corrective Therapy, a six weeks' course offered during the summer at a Veterans Hospital under the auspices of the professional staff. Room and board is provided by the supervising hospital.

Students interested in meeting the requirements for employment in the Veterans Administration as corrective therapists should indicate such an interest prior to completing their junior year. Subsequent to completing the course, those interested trainees will file application for Federal Employment with the Board of Civil Service Examiners, Veterans Administration Central Office, Washington, D. C.

GRADUATE SCHOOL

The School of Physical and Health Education, Recreation, and Safety offers courses leading to the Master of Science Degree, with an emphasis in Health and Safety Education, Physical Education, or Recreation; or combinations of all three areas.

Additional information concerning graduate work in the School of Physical and Health Education, Recreation, and Safety may be obtained in the *Announcements* of the School or the *Announcements* of the Graduate School.

COURSES OF INSTRUCTION

HEALTH EDUCATION

2. Personal and Community Health. I, II. 2 hr. Those phases of hygienic living which should be understood by all college students. Special emphasis on personal aspects of hygiene. Mr. Holter

101. The Elementary School Health Program. I, II, S. 2 hr. PR: Educ. 105. A study and analysis of the health program which takes place in the school or through the efforts of school personnel; the organization, educational aspects, and personnel relationships involved in school health services, healthful school living, and health education. Required for teacher certification. Mr. Holter

102. The Secondary School Health Program. I, II, S. 2 hr. PR: Educ. 105. A study and analysis of the health program which takes place in the school or through the efforts of school personnel; the organization, educational aspects, and personnel relationships involved in school health services, healthful school living, and health education. Required for teacher certification. Mr. Holter

201. Advanced School Health. I, S. 3 hr. PR: Health Educ. 101, 20 hr. of Education, or consent. An analysis of problems in school health services, healthful school living, the nature of health education and the scope of health instruction which confronts teachers and administrators. Mr. Holter

[1]Corrective therapy is the application of the principles, techniques, and psychology of medically oriented physical education to assist the physician in the accomplishment of prescribed objectives. It is administered under the direct supervision of a physician who determines the goals and limits of the therapist's work and specifies these by prescription.

[2]Present affiliation is with the Veterans Administration Hospital, Leech Farm Road, Pittsburgh 6, Pa.

205. Philosophy of Health Education. I, S. 3 hr. PR: Health Educ. 2, and 101, or equivalent. Analysis of the scientific bases, purposes, procedures, and content, with implications for school and public health education programs. Mr. Holter

301. Community Health. II, S. 3 hr. PR: Health Educ. 2, and 205, or equivalent. Health problems requiring community action, basic public health activities, community organization for health protection, voluntary health agencies, school health programs and the role of state and federal agencies in the community health program. Mr. Holter and Visiting Lecturers

376. Evaluation of Health Information. I, S. 3 hr. PR: Health Educ. 2, and 201, or 20 hr. of Education and consent. Study of published material to determine basic scientific accuracy and value. Mr. Holter

394. Seminar in Health Education. I, II, S. 4 hr. PR: Health Educ. 205. An overview and critical analysis of the literature and research in health education. Mr. Holter

397. Individual Research Problems in Health Education. I, II, S. 1-4 hr. PR: Health Educ. 205, and HPERS* 375 or 395, or Educ. 301. Opportunity for independent study and investigation of pertinent problems. For advanced students with practical experience. Mr. Holter

398. Practicum in Health Education. I, II, S. 4 hr. PR: Health Educ. 394, and HPERS 396 and 397. Program planning, curriculum development and job functions in health education. Mr. Holter

*See page 432.

PHYSICAL EDUCATION

Professional Curriculum

30. Beginning and Intermediate Swimming. I, II. 1 hr. (M). Instruction in the basic swimming strokes and beginning diving. All physical education and recreation majors who do not pass the swimming skill tests must register for this course. Mr. Markel

31. Team Sports. I. 1 hr. (W). Fundamentals, skills, and practice in playing soccer and basketball. Mrs. Beto

32. Team Sports. II. 1 hr. PR: Phys. Educ. 31. (W). Techniques and practice in teaching and officiating basketball. Fundamental skills and practice in softball. Mrs. Beto

33. Swimming and Diving. I. 1 hr. PR: Phys. Educ. 14 or equivalent. (W). Miss Blakemore

34. Tennis and Archery. I. 1 hr. (W). Miss Hurst

35. Modern Dance Technique. I. 1 hr. (W). Mrs. Wiedebusch

36. Movement and its Rhythmic Structure. II. 2 hr. (W). PR: Phys. Educ. 35. Understanding of the nature and scope of rhythm in physical education programs. Mrs. Wiedebusch

37. Advanced Modern Dance. I, II. 1 hr. PR: Phys. Educ. 35 (W). Continuation of Phys. Educ. 35, including methods of teaching. Mrs. Wiedebusch

38. Dance Composition. II. 2 hr. PR: Phys. Educ. 35, 36 (W). Problems in force, time, and space as elements of expressive movement. Mrs. Wiedebusch

†41. Physical Education for Elementary Teachers. I. 1 hr. (W). A variety of basic activities giving an understanding of content in the total physical education program of the elementary school. Miss Hurst

†These courses are required for certification for Elementary School teaching certificates.

42. Physical Education for Elementary Teachers. II. 1 hr. (W). A continuation of Phys. Educ. 41. Miss Hurst

†43. Physical Education for Elementary Teachers. I, S. 2 hr. PR: Phys. Educ. 1 and 2 or 41 and 42, or consent. Philosophy, objectives, identification of physical education, health education, and recreation, and a broad selection of activities adapted to the primary and intermediate levels. Laboratory work and observation in the elementary schools are required.
Mr. Tork and Mrs. Wiedebusch

51. Fundamentals of Baseball and Gymnastics. I. 2 hr. (M).
Mr. Bonsall and Mr. Harrick

52. Advanced Swimming, Life Saving, and Water Safety. I, II. 1 hr. (M). PR: Phys. Educ. 30 or equivalent. Theory and practice in aquatics and water safety, opportunity to qualify for American Red Cross Senior Lifesaving Certificate.
Mr. Markel

53. Junior and Senior High School Activities and Games. I. 2 hr. (M). Theory and fundamentals of speedball, soccer, volleyball, touch football, archery, and games of low organization. Mr. Bonsall and Mr. Markel

54. Individual and Dual Sports. II, S. 2 hr. Theory and practice in fundamentals of badminton, bowling, golf, handball, and tennis. Mr. Semon

55. Fundamentals of Basketball and Wrestling. I. 2 hr. (M).
Mr. King and Mr. Harrick

56. Fundamentals of Track and Football. II. 2 hr. (M).
Mr. Romanoski and Mr. Barnette

61. Stunts, Tumbling, and Trampoline. II. 1 hr. (W). Mr. Bonsall

63. Hockey and Volleyball. I. 1 hr. (W). Fundamentals, skills, and practice.
Miss Blakemore

66. Graded Games and Lead-up Games. II. 1 hr. Games for all ages which may be used in home, school, playground, and gymnasium, and lead-up games in various sports. Miss Hurst

68. Officiating Athletics. II. 1 hr. (W). Rules, techniques, and laboratory work.
Mrs. Beto

71. Orientation in Physical Education. I. 2 hr. Purposes, scope, and possibilities in health education, physical education, recreation, and coaching in the school program. Mr. Duncan and Mr. Semon

121. Athletic Training and First Aid. I. 2 hr. (M). Lectures, demonstrations, and practice work in training and first aid in athletics. Mr. Gwynne and Mr. Donley

124. Instructorship in Swimming, Lifesaving, and Water Safety. II. 1 hr. PR: Phys. Educ. 52 or equivalent. Teaching methods in swimming and water safety. Meets American Red Cross Certification Standards and course completion carries eligibility for teaching swimming, lifesaving, and water safety. Open only to students who have valid lifesaving cards. Mr. Yost

125. Program Assisting. I. 1 hr. (M). Mr. Semon

126. Program Assisting. II. 1 hr. (M). Mr. Semon

130. Program Assisting. I. 1 hr. (W). Miss Carruth

131. Program Assisting. II. 1 hr. (W). Miss Carruth

132. Folk Dancing. II. 1 hr. Fundamentals and materials of folk dancing. Miss Hurst

155. Theory of Coaching. I. 2 hr. A study of coaching methods, systems, and team development in the various varsity-type sports. Mr. Barnette

171. Basic Rhythms and Dance Accompaniment. II. 2 hr. PR: One semester of modern dance. Understanding of the basic principles of rhythm as they relate to body movement. (Ability to play the piano is not required.) Miss Hutchinson

175. Anatomy and Kinesiology. I, II. 5 hr. Principles of mechanics of body movement in relation to anatomical structure. Mrs. Beto and Dr. Hesen

176. The Adapted Program in Physical Education. II. 2 hr. PR: Phys. Educ. 175. A basic course dealing with deviations from the normal and the organizing and adapting of physical education programs to meet the needs of atypical students or those with special problems. Mr. Yost

177. History and Principles of Physical Education. II. 3 hr. Development of physical education from early civilization to present time. Basic principles underlying modern programs. Miss Carruth

180. The Physical Education Program in the Elementary School. II. 2 hr. Theory and practice of activities in physical education for elementary school children. Mr. Tork

191. Introduction to Tests in Health and Physical Education. I. 2 hr. A background course in physical achievement tests. History of development; review of outstanding tests. Essential procedures used in evaluating tests and their results including statistical analysis. Mr. Yost

206. Program in Individual Sports. S. 3 hr. PR: Phys. Educ. 51, 55, 56, 155 or equivalent. Designed for coaches of interscholastic athletics. A study of advanced coaching techniques and methods in track and field activities, wrestling, and gymnastics. Messrs. Bonsall, Harrick, and Romanoski

207. Program in Team Sports. S. 3 hr. PR: Phys. Educ. 51, 55, 56, 155, or equivalent. Designed for coaches of interscholastic and intercollegiate athletics. A study of advanced techniques, systems of play, offense, defense, methodology, staff organization, and related problems in the coaching of football, basketball, and baseball. Messrs. Barnette, Harrick, and King

208. Advanced Athletic Training and Conditioning. I, S. 3 hr. PR: Phys. Educ. 121, 175; Zool. 171, or equivalent. To acquaint graduate and pre-physical therapy students with recent theories, practices, and techniques in the prevention, care, and treatment of athletic injuries. Mr. Donley

209. Rhythms and Dance. II, S. 3 hr. PR: Consent. Designed for classroom teachers in elementary and secondary schools. Principles of movement, materials, and practicum in dance. (Not open to physical education majors.) Miss Hurst

210. Program in Sports. S. 3 hr. (W). PR: Phys. Educ. 31, 32, or equivalent. Designed especially for women engaged in teaching and coaching. Organization and administration of individual, dual, and team sports. Practicum in girls' and women's sports. Mrs. Beto

212. Extracurricular Physical Education Activities for Secondary School Girls. I, S. 3 hr. PR: Consent. Critical analysis of physical education extracurricular activities from the standpoint of objectives and contributions to the general welfare of the participants; value of the activities in the school and community; relationship to the physical education program; problems associated with the organization and administration of the program. Miss Blakemore

219. Modern Dance Techniques and Composition. I, S. 3 hr. PR: Phys. Educ. 35 and 36 or consent. Application of scientific principles of movement; basic principles of music as related to dance movement; choreorgraphic principles; practicum in dance movement. Principles for teaching the dance and problems involved in planning programs. Miss Carruth

225. Officiating Football and Basketball. I, S. 2 hr. Rules and techniques of officiating, officials' organizations, and laboratory work. Mr. Tork

276. Residence in Corrective Therapy. S. 6 hr. PR: Phys. Educ. 175, 176, and selected psychology courses. An intensive 6-weeks course offered during the Summer under the auspices of the professional staff of a hospital. The course consists of 240 clock hours of staff lectures and practical clinical experience in corrective therapy as it is integrated in the Physical Medicine and Rehabilitation Program of a hospital.
Mr. Yost and Staff of Supervising Hospital

278. Administration of Physical Education. II, S. 3 hr. PR: Phys. Educ. 71, 177. Modern theories in physical education and guiding principles in organization and administration of the program. Mr. Duncan

279. Administration of Athletics. S. 3 hr. PR: Experience in coaching and administration. The course is designed for persons engaged in actual coaching and administration. A study of the problems associated with the organization and administration of interscholastic and intercollegiate athletic programs and their relationship to physical education. Mr. Barnette and Mr. Duncan

292. Physical Education in the Elementary School. I, S. 2 hr. PR: Teaching experience or consent. Philosophy, objectives, activities, equipment, utilization of space, program planning, and evaluation for a functional program in elementary school physical education. (Not open to major students.) Mr. Tork

293. Organization and Administration of Intramural Sports. I, S. 3 hr. PR: 4 hr. of physical education activity courses. Critical analysis with view to justification from standpoint of objectives and of contribution to general welfare of students participating. Organization and administration of programs on secondary and college levels. Mr. Semon

294. Philosophy of Physical Education. I, II, S. 3 hr. PR: Phys. Educ. 177 and 278 or equivalent and consent. Critical analysis of bases for physical education programs. Recent trends affecting planning on each educational level, and probable growth of responsibilities of instructors. Miss Carruth

295. Principles and Practices of Adapted Physical Education. I, S. 2 hr. PR: Zool. 171, Phys. Educ. 175, or equivalent. Principles and philosophy in building an adapted program, types of injuries, classification of students, and application of adapted exercises. Mr. Yost

319. History and Philosophy of the Dance. II, S. 3 hr. PR: Phys. Educ. 219 or equivalent. A cultural survey of the dance as an expression of the society it represents; philosophy of the dance; the relation of dance to other art forms; dance as an educational experience and the study of the works of the outstanding artists of today. Miss Carruth

380. Curriculum Development in Physical Education. S. 3 hr. PR: Phys. Educ. 294. Application of educational principles to program planning in physical education. Formulation of criteria as a basis for curriculum revision to meet changing needs in the school program. (Limited to major students.) Miss Carruth

394. Seminar in Physical Education. I, II, S. 4 hr. PR: Phys. Educ. 294. An overview and critical analysis of the literature and research in physical education.
Miss Carruth

397. Individual Research Problems in Physical Education. I, II, S. 1-4 hr. PR: Phys. Educ. 294, and HPERS 375 or 395; or Educ. 301. Opportunity for independent study and investigation of pertinent problems. For advanced students with practical experience. Miss Carruth, Mr. Holter, and Mr. Yost

398. Practicum in Physical Education. I, II, S. 4 hr. PR: Phys. Educ. 394, and HPERS 396 and 397. Program planning, curriculum development, and job functions in physical education. Miss Carruth

RECREATION

1. Introduction to Recreation. II. 3 hr. A framework into which the other recreation courses with all their implications will fit. History, trends, concepts, relationship to other fields; surveys of national organizations, leaders, and literature. This course is basic to all other recreation courses. Mr. Scherlacher

4. Recreation and the School. I. 3 hr. Study of basic concepts of play, recreation, leisure, and their relationship to personal and community life. Human interest areas of approach to organized programs in school recreation centers. Mr. Scherlacher

5. Introduction to Arts and Crafts in Recreation. I. 2 hr. Workshop course. Place of arts and crafts in recreation, their organization, and integration with other phases of recreation. Mr. Hutchison

11. Nature Recreation and Camping. II. 3 hr. Lecture and workshop. Introduction to organized camping movement including purposes, camp sites, equipment, programs and leadership. Exploration of nature recreation and its relationship to community recreation and camping programs. Mr. Hutchison

12. Social Recreation. I. 3 hr. Lecture and workshop course. Place of social recreation activities, informal dramatics and music in community center, playground, camp and school extra-curricular programs. Mr. Hutchison

102. Program Planning. II. 3 hr. PR: Rec. 1. Fundamentals for general program planning; considering needs, facilities, age groups, local customs, climatic factors etc. Planning involved in playgrounds, indoor centers, playfields, parks, hospitals, voluntary agencies, industry, and camps. Mr. Hutchison

104. Functional Planning of Recreation Facilities. II. 3 hr. Lecture and workshop. Problems and principles governing the planning for functional and the effective usage of facilities in recreation. Emphasis on playgrounds, playfields, indoor centers, parks, camps, and swimming pools. Mr. Scherlacher

107. Recreation Leadership and Group Work. I. 3 hr. Meaning of leadership, its application to field of recreation, and analysis of techniques. Examination of social group work method and its application in recreation particularly in National Youth organizations. Mr. Hutchison

145. Field Work. 3 hr. Recreation majors are required to have at least 8 weeks of supervised recreation leadership field work. Usually during summer following junior year. Arrangements under the direction of adviser. Mr. Scherlacher

202. Philosophy of Recreation. II, S. 3 hr. PR: Major students in recreation, graduate students in Education and Physical Education; or consent. Interpretation of recreation as a basic part of the living process; importance to individual community, and national welfare; social and economic significance. Mr. Scherlacher

204. Recreation Hobbies. I, S. 2 hr. PR: Rec. 1 or equivalent. Lecture and workshop. Value of hobbies to youth and adults; participation in various types of hobbies; methods of organization and presentation; nature and scope. Mr. Hutchison

206. Social Recreation for School-Age Groups. II, S. 3 hr. PR: 12 hr. in Education or consent. Workshop course. Planning and conduct of social activities, parties, picnics, special events and other recreation experience adapted to home, church, school, and community. Mr. Hutchison

265. Leisure and Recreation. I, S. 3 hr. PR: Physical Education and Recreation majors or 14 hr. in Education or consent. Study of leisure as a social phenomenon in our modern culture and its implications for recreation. Mr. Scherlacher

271. Administration of Camps and Preparation of Camp Counselors. II, S. 3 hr. PR: Rec. 11 or equivalent, or consent. Principles involved in modern camping programs, methods of organization and administration of camps. Mr. Hutchison

282. Administration of Recreation. I, S. 3 hr. PR: Major in recreation, graduate status in Education or Physical Education, or consent. General principles of administration; organization of staff administrative procedures. Study of enabling laws, legal responsibilities, surveys, finance, programs, facilities, and public relations. Mr. Scherlacher

294. Recreation Leadership in Groups. II, S. 2 hr. PR: 5 hr. general and educational psychology, or at least 1 year of leadership experience with teen-age children, or consent. For those working in voluntary agencies such as Y.M.C.A., Boy Scouts, Girl Scouts, etc. Also for those responsible for special-interest groups in extra-curricular activities. Mr. Scherlacher

295. Leadership in Nature Recreation. II, S. 2 hr. PR: 5 hr. in biology, botany, or zoology, or combination; Rec. 1, 3, or equivalent, and at least 1 year of leadership experience with teen-age children. For recreation leaders, camp counselors, and teachers who work with school-age children in camps or in special interest groups. Mr. Scherlacher

296. American Folk Dance. I, S. 3 hr. PR: Phys. Educ. 132 or equivalent. Study of American Square, contra, circle, and round dances and play party games, and their place in community and school recreation programs. Their origin and relationship to the arts and other aspects of American culture. Analysis of techniques in leading and calling. Mr. Scherlacher

305. Human Interest Areas in Recreation Planning. I, II, S. 3 hr. PR: Rec. 202 or 20 hr. in Educ. or equivalent. Exploration of the human interest areas which are the sources of recreation program content. Their adaptation to school and municipal recreation program planning. Mr. Scherlacher and Visiting Instructors

306. Leadership in School-Age Recreation Programs. II, S. 2 hr. PR: Rec. 107 or 2 years' teaching experience. Leadership techniques used in various recreation activities of school-age groups. Analysis of differences between teaching and recreation leadership. Mr. Hutchison

307. Community Recreation. I, S. 3 hr. PR: Rec. 202 or consent. A study of problems related to the provision of adequate recreation service for a community. Standards and quality of recreation service; methods of measuring existing services and their coordination; and community organization procedures. Course is designed for leaders in voluntary agencies, schools, churches, and municipal recreation organizations. Mr. Scherlacher and Visiting Instructors

394. Seminar in Recreation. I, II, S. 4 hr. PR: Rec. 202. An overview and critical analysis of the literature and research in recreation. Mr. Scherlacher

397. Individual Research Problems in Recreation. I, II, S. 1-4 hr. PR: Rec. 202, HPERS 375 or 395, or Educ. 301. Opportunity for independent study and investigation of pertinent problems. For advanced students with practical experience. Mr. Scherlacher

398. Practicum in Recreation. I, II, S. 4 hr. PR: Rec. 394, HPERS 396 and 397. Program planning, curriculum development, and job functions in recreation. Mr. Scherlacher

SAFETY EDUCATION

127. Accident Prevention and First Aid. I, S. 2 hr. Standard and advanced first aid as outlined by the American Red Cross. Miss Hurst

181. Principles of Safety Education. I. 2 hr. An introductory course. Basic principles of safety education and accident prevention. Deals with the development of the safety movement and its place in education. Mr. Maurice

182. Techniques and Procedures in Driver and Traffic Safety Education. II, S. 3 hr. PR: Safety Educ. 181 or equivalent, or 6 hr. of Education and valid driver's

license. A basic course designed to prepare teachers of driver education; includes supervised practice-driving-instruction (laboratory arranged). Mr. Maurice

280. Programs in Safety Education. I, II, S. 3 hr. PR: Consent. Materials and methods in total school program. Organization and administration of instruction in safe living in school, home, travel, industry, physical education, athletics, and recreation. Mr. Yost

281. Driver and Traffic Safety Education Programs. II, S. 3 hr. PR: Safety Educ. 280 or equivalent or 20 hr. of Education. Philosophy, objectives, new and advanced equipment, methods and materials in driver and traffic safety education; program planning, and evaluative techniques in schools and adult programs. Includes laboratory with various methods, materials, and instructional techniques. Mr. Maurice

282. Problems in Driver and Traffic Safety Education. I, II, S. 3 hr. PR: Safety Educ. 182 or equivalent, or teaching experience in driver education. A course designed for pre-service and in-service teachers of driver education and traffic safety; individual and group problems considered. Examination of existing courses of study, research, and supervisory and evaluative practices. Mr. Maurice

283. Philosophy of Safety Education. I, II, S. 3 hr. PR: Safety Educ. 181, 182, or 20 hr. of Education. Study of the place of safety education in modern living; philosophies of safety education as expounded by leaders in the field; emphasis on accident causation and accident prevention in various areas of safety; and research implications. Mr. Yost

365. Organization, Administration, and Supervision of School Safety Education. I, II, S. 3 hr. PR: 14 hr. of Education or Safety Educ. 281 or 283 or equivalent, and consent. Designed for teachers, school administrators, college instructors, and others responsible for directing or supervising safety programs in the school. Deals with the problems, policies, practices, and procedures involved in the organization, administration, and supervision of a comprehensive accident prevention and safety education program for the school. Considers integration factors of the School Safety Program with the Community Safety Program. Mr. Yost

394. Seminar in Safety Education. I, II, S. 4 hr. PR: Safety Educ. 283. An overview and critical analysis of the literature and research in safety education. Mr. Yost

397. Individual Research Problems in Safety Education. I, II, S. 1-4 hr. PR: Safety Educ. 283, HPERS 375 or 395, or Educ. 301. Opportunity for independent study and investigation of pertinent problems. For advanced students with practical experience. Mr. Yost

398. Practicum in Safety Education. I, II, S. 4 hr. PR: Safety Educ. 394, and HPERS 396 and 397. Program planning, curriculum development, and job functions in safety education. Mr. Yost

HPERS

HPERS courses involve all areas — Health Education, Physical Education, Recreation, and Safety Education.

200. Workshop. S. 1-6 hr. Health Education, Physical Education, Recreation, Safety Education. Staff

201. Seminar of Foreign Programs in Health, Physical Education, Recreation and Safety. S. 2-6 hr. PR: Consent. Study of health, physical education, recreation, athletics, and safety programs as they exist in the countries visited will be made in terms of philosophy, program content, facilities, administration. This course is designed for administrators and teachers. Staff

301. The Role of the School Administrator in Conducting Programs in Health, Physical Education, Recreation, and Safety. S. 2 hr. PR: 20 hr. in Education. A seminar for school administrators on the solution of problems associated with planning, scheduling and conducting school programs in health, physical edu-

cation, recreation, and safety. Consideration is given to program, activity, leadership, facilities, supplies, equipment, finances, and supervision. (Not open to major students.) Miss Carruth, Messrs. Duncan, Holter, and Scherlacher

350. Measurement in Health, Physical Education, Recreation, and Safety. II, S. 3 hr. PR: Health Educ. 205 or Phys. Educ. 294 or Rec. 202 or Safety Educ. 283. Critical and statistical analysis of outstanding tests in health, physical education, recreation, and safety, and their results. Mr. Holter

355. Problems in Health, Physical Education, Recreation, and Safety. I, S. 3 hr. PR: Health Educ. 205 or Phys Educ. 294 or Rec. 202 or Safety Educ. 283. Content and relationships among physical education, health education, recreation, and safety programs. Aims to develop critical analysis. Follows seminar procedure and presupposes broad academic experience on part of the student. Mr. Holter

375. Introduction to Research in Health, Physical Education, Recreation, and Safety. II, S. 3 hr. PR: Health Educ. 205 or Phys. Educ. 294 or Rec. 202 or Safety Educ. 283. An analysis of the nature and purpose of research with an emphasis upon the characteristics of research in areas of health, physical education, recreation, and safety. (Required of all Master of Science degree candidates.) Miss Carruth, Messrs. Holter and Yost

395. Research Seminar in Health, Physical Education, Recreation, and Safety. II, S. 3 hr. PR: Health Educ. 394 or Phys. Educ. 394 or Rec. 394 or Safety Educ. 394 or Educ. 301. Research techniques as basis for compiling and organizing materials for research projects. (Required of all candidates for the doctoral degree.) Miss Carruth, Messrs. Holter and Yost

396. Administrative Policies. I, II, S. 3 hr. PR: Health Educ. 394 or Phys. Educ. 394 or Rec. 394 or Safety Educ. 394, and Educ. 339 or Educ. 340. Mr. Duncan

397. Supervision. I, II, S. 3 hr. PR: HPERS 396 and Educ. 336 or Educ. 335 or Educ. 341. Mr. Duncan

399. Thesis. I, II, S. 6 hr. PR: HPERS 375 or 395. Staff

THE STAFF

Part IV

The first date following titles indicates the most recent appointment. The second date indicates year of first appointment to a University position.

Staff members whose names are followed by an asterisk (*) are employed in cooperation with the United States Department of Agriculture.

MARGUERITE E. ABEL, B.A., B.S.L.S., *Reference Librarian* (part-time) Medical Center *Library* (1960).

RICHARD ATKINS ACKERMAN, B.S., M.S., *Assistant Professor of Dairy Science; Assistant Dairy Scientist, Agricultural Experiment Station* (1946), 1928.

JOHN DAVIS ADAMS, B.S., D.D.S., *Professor and Chairman of Crown and Bridge Dentistry* (1958).

ROBERT EVANS ADAMS, B.S., PH.D., *Associate Professor of Plant Pathology; Associate Plant Pathologist, Agricultural Experiment Station* (1960), 1953.

MARGARET JORALEMAN ALBRINK, B.A., M.S., M.D., M.P.H., *Associate Professor of Medicine* (1961).

WILHELM STOCKMAN ALBRINK, B.A., PH.D., M.D., *Professor of Pathology* (1961).

LILLIAN FRANCES ALFRED, B.S., M.S., *Instructor in Chemistry* (1961).

HOWARD BUSHNELL ALLEN, B.S., M.S., PH.D., *Professor of Education* (1932), 1920.

FATSY RUTH ALLISON, B.S., M.S.ED., *Assistant Dean of Women* (1960).

BETTY ENICKS ALTIZER, B.S., M.S., *Instructor in Mathematics* (1959).

VANCE QUENTIN ALVIS, B.S., M.A., PH.D., *Professor of Economics* (1960), 1956.

NELLE PERREL AMMONS, A.B., M.A., PH.D., *Professor Emeritus of Botany* (1959), 1920.

HAROLD IRVIN AMORY, PRE-MED, M.D., *Professor and Chairman of Radiology* (1960).

GERALD CLIFTON ANDERSON, B.S., M.S., PH.D., *Chairman of Animal and Veterinary Science; Professor of Animal Science; Animal Husbandman, Agricultural Experiment Station* (1960), 1950.

JAMES TREAT ANDERSON, B.S.M.E., M.S.M.E., D.I.C., PH.D., *Professor and Chairman of Mechanical Engineering* (1960).

WILLIAM EVAN ANDERSON, A.B., M.D., *Assistant Professor of Medicine* (1961), 1960.

CHARLES EDWARD ANDREWS, M.D., *Associate Professor of Medicine* (1960).

PETER JAMES ANTALIS, B.A., M.D., *Resident in Surgery* (1961).

CHESTER ABBO ARENTS, B.S.E.E., M.S.E.E., M.E., *Dean, College of Engineering* (1955).

WALTER WARDLAW ARMENTROUT, B.S.AGR., M.S., PH.D., *Professor of Agricultural Economics and Rural Sociology; Agricultural Economist, Agricultural Experiment Station* (1936), 1924.

WILLIAM HENRY ARMSTRONG, B.S., M.S., *Associate Professor of Industrial Engineering* (1957).

MARY ROGERS ASHBURN, A.B., M.A., *Instructor in English* (1959), 1946.

THELMA G. ATKESON, B.A., M.S.S.W., *Senior Social Worker* (1961).

PAUL ALEXANDER ATKINS, B.S.J., M.A., *Associate Professor of Journalism; Faculty Adviser, Daily Athenaeum* (1961), 1953.

EILEEN LEANORA AUGUST, B.S., *Senior Medical Technician* (1960).

JO MATHER AULL, *Instructor* (part-time) *in Art* (1945).

ANDREW KOLB AULT, B.S., M.ED., *Instructor in Education* (1961), 1952.

GLADYS RABER AYERSMAN, B.S.H.E., M.S., *Assistant Professor of Home Economics* (1954), 1943.

CHARLES HENRY BAER, B.S., M.SC., PH.D., *Assistant Professor of Biology* (1961), 1948.

RAPHAEL OTTO BACHMANN, B.S., PH.D., *Dean, School of Pharmacy; Professor of Pharmaceutical Chemistry* (1961).

WESLEY MARVIN BAGBY, A.B., M.A., PH.D., *Assistant Professor of History* (1957), 1956.

BENJAMIN HASTING BAILEY, A.B., M.ED., ED.D., *Assistant Professor of Education* (1959).

LOUIS REED BAKER, A.B., M.D., *Instructor in Anesthesiology* (1960).

WILFRED HARMON BAKER, B.S.C.E., M.S.C.E., *Professor of Civil Engineering* (1955), 1941.

ROBERT DODGE BALDWIN, A.B., A.M., PH.D., *Professor of Educational Administration; Coordinator of Field Services, College of Education* (1933), 1931.

EDWIN CLYDE BARBE, B.S.E.E., M.S.E.E., *Assistant Professor of Electrical Engineering* (1959), 1956.

Richard Hall Barnard, B.S.Ch.E., M.S.Ch.E., Ph.D., *Assistant Professor of Mathematics, Parkersburg Branch, W.V.U.* (1961), 1957.
Alice Elizabeth Barnett, B.S., M.S., *Instructor in Biology* (1960), 1959.
Horace Leslie Barnett, A.B., M.S., Ph.D., *Chairman of Plant Pathology, Bacteriology, and Entomology; Professor of Mycology; Mycologist, Agricultural Experiment Station* (1960), 1945.
William Lee Barnett, B.A., *Instructor* (part-time) *in Speech; Assistant Debate Coach* (1961).
W. Quentin Barnette, B.S., M.A., *Assistant Professor of Physical Education; Freshman Basketball Coach* (1958), 1950.
William Derrick Barns, A.B., M.A., Ph.D., *Associate Professor of History* (1954), 1940.
Alfred Lowell Barr, B.S.Agr., M.S.Agr., Ph.D., *Associate Professor of Agricultural Economics and Rural Sociology; Associate Agricultural Economist, Agricultural Experiment Station* (1961).
Edgar Overton Barrett, A.B., *Publicity Director, Intercollegiate Athletics* (1956), 1951.
Mary Jane Barrett, B.S., *Nurse Technician in Neurosurgery* (1960).
Karl Melvin Barth, B.S., M.S., *Assistant in Agricultural Biochemistry, Agricultural Experiment Station* (1958).
Elizabeth Ann Bartholomew, A.B., M.S., *Herbarium Assistant* (1941), 1938.
Mildred Mitchell Bateman, B.S., M.D., *Lecturer* (part-time) *in Social Work* (1957).
Alice Lee Googe Bauer, A.B., B.S.L.S., *Chief Technical Processes Librarian* (1954).
Newton Moore Baughman, B.S., M.S., Ph.D., *Professor of Agronomy; Agronomist, Agricultural Experiment Station* (1960), 1949.
Mary Catherine Bayles, A.B., A.M., *Assistant Registrar* (1946), 1924.
Carol Lee Beatty, R.N., *Staff Nurse, University Health Service* (1961).
Michel Joseph Beauchemin, Ed.B., M.A., *Instructor in Romance Languages* (1956).
John Francis Lockett Bell, B.S.F., *Associate Forester* (part-time), *Agricultural Experiment Station* (1960), 1953.
Waldo E. Bell,* B.S.Agr.Eng., *Extension Agricultural Engineer, Cooperative Extension Service* (1945).
Glenn D. Bengtson, B.S., *Associate Editor, Communications and Visual Aids* (1961), 1953.
Donald William Bennett, Capt., B.S.M.E., *Assistant Professor of Air Science* (1958). (Resigned August 8, 1961).
Herald D. Bennett, Ph.D., *Professor of Biology* (1955), 1948.
Jonathan McCauley Bennett, *Chief Flight Instructor in Aero-Space Engineering* (1951).
Arnold Benson, B.A., M.A., *Instructor in Biology* (1960), 1959.
Dorothy Jean Benson, B.S.H.E., M.S.H.E., *Dietitian, Men's Dining Hall* (1953).
Gordon Alger Bergy, Ph.C., B.S.Pharm., M.S., *Professor Emeritus of Pharmacy* (1960), 1916.
Joan Berry, R.N., *Head Nurse, Emergency Room, University Hospital* (1960).
Betty Isaac Berthy, A.B., B.S.H.E.Ed., *Assistant Professor of Home Economics* (1957), 1956. (Resigned September, 1961).
Howard Phillip Berthy,* B.S.F., *Extension Forester, Cooperative Extension Service* (1953), 1950.
Charity White Beto, A.B., M.S., *Associate Professor of Women's Physical Education* (1957), 1946.
William Robert Biddington, D.D.S., *Professor and Chairman of Endodontics* (1959).
Fred Bierer, *Suervisor of Maintenance, Physical Education and Intercollegiate Athletics* (1947).
Robert Lee Birch, B.S., M.S., *Instructor in Biology* (1948).
Victor Edgar Bird, B.S., D.D.S., *Instructor* (part-time) *in Oral Surgery* (1959).
James Daniel Biser, *Mechanician in Industrial Engineering* (1957).
Carter Richard Bishop, A.B., M.A., Ph.D., *Professor of English* (1953), 1929.
J. Temple Black, B.S.I.E., *Instructor in Industrial Engineering* (1960).
Kittie Jean Blakemore, B.S., M.S., *Instructor in Physical and Health Education, Recreation, and Safety* (1960).
Charles William Blissitt, B.S., Ph.D., *Assistant Professor of Pharmacy* (1958).
Ruth Naomi Blodgett, A.B., B.S.L.S., *Documents Librarian* (1951), 1932.

Byron M. Bloor, B.S., M.D., *Associate Professor of Surgery and Chairman of Neurosurgery* (1960).
Don Houston Blount, A.B., M.A., Ph.D., *Assistant Professor of Physiology* (1961).
Sallie Shrewsbury Board, A.B., A.M., *Instructor in English* (1945).
Lorise Caroline Boger, B.A., M.S., *Senior Reference Librarian* (1959), 1957.
Earl Ruffner, Boggs, A.B., M.A., Ph.D., Pt.D., *Dean, College of Education; Professor of Education* (1960).
Evelyn Lazenby Bonar, A.B., M.A., *Instructor in English* (1958).
Donovan Hiner Bond, B.S.J., M.A., *Director of Development; Professor of Journalism* (1960), 1946.
Gladys Violet Bond, R.N., *Nurse in Oral Surgery* (1959).
Barbara June Davis Bonfili, B.S., *Junior Catalogue Librarian* (1961).
William Alfred Bonsall, B.S., M.S., *Assistant Professor of Physical Education and Gymnastics Coach* (1958), 1950.
George Paul Boomsliter, M.S.C.E., *Professor Emeritus of Mechanics* (1949), 1920.
Kenneth Ray Boord,* *Associate Agricultural Extension Editor, Cooperative Extension Service* (1953), 1943.
Winifred Marie Booth, B.S.Ed., M.A., *Assistant to Dean, College of Education; Lecturer in Education* (1948), 1930.
Jennie Delawder Boughner, A.B., *Extension Assistant* (Retired) (1958), 1915.
Herman M. Bowers,* B.S.Agr., *Assistant Director of Cooperative Extension Service* (1951), 1929.
Joanne Walker Bowie,* A.B., *Assistant Extension Editor, Cooperative Extension Service* (1959).
John Dee Bowser, B.S., M.S., *Instructor in Mathematics* (1959), 1957. (Resigned September 1, 1961).
Betty Boyd, A.B., *Dean of Women* (1955), 1948.
Sam Boyd, Jr., B.F.A., M.F.A., *Professor of Speech and Director of Drama; University Marshal* (1959), 1943.
Charles Chester Boyer, B.S., M.A., Ph.D., *Associate Professor of Gross and Neurological Anatomy* (1957).
Fred E. Boyers, B.S., D.D.S., *Assistant Professor of Prosthodontics I* (1957).
Harold Henry Boyers, D.D.S., *Assistant Professor of Operative Dentistry and Oral Anatomy* (1958).
William Robert Boyle, B.S., M.S.N.E., *Instructor in Chemical Engineering* (1961), 1960.
Charles Burton Boyles, B.S., M.S., *Instructor in Animal Science; Superintendent, Animal Husbandry Farm, Agricultural Experiment Station* (1959), 1954.
Allan James Braff, A.B., M.B.A., Ph.D., *Assistant Professor of Economics* (1959).
Louis Richard Bragg, A.B., M.S., Ph.D., *Associate Professor of Mathematics* (1959). (Resigned September 1, 1961).
Mildred Peters Brain, A.B., M.A.L.S., *Chief Audio-Visual Aids Librarian* (1958).
James Paul Brawner, A.B., A.M., Ph.D., *Professor and Chairman of English* (1952), 1935.
Thomas John Brennan, B.S.Ed., M.A.Ed., Ed.D., *Professor of Education* (1961), 1941.
Anna Brochick, A.B., M.A., *Instructor in Education; Teacher, University High School* (1938).
Sara Elizabeth Brock, B.S., M.S., *Instructor in Education; Teacher University High School* (1961).
Maurice Graham Brooks, A.B., M.S., *Professor of Wildlife Management; Forester, Agricultural Experiment Station* (1947), 1923.
Christopher George Brouzas, A.B., A.B.in Ed., A.M., Ph.D., *Professor and Chairman of Classics* (1935), 1926. (Deceased February 24, 1962).
Clifford Woodrow Brown, B.S., M.F.A., *Associate Professor of Music and Chairman of Music Education; Associate Professor of Education* (1956), 1942.
Emmett Francis Brown, B.S., D.D.S., *Instructor* (part-time) *in Oral Diagnosis and Practice Administration* (1960).
George Samuel Brown, A.B., M.S., *Coordinator of Rehabilitation Counseling* (1960).
James Harold Brown, B.S., M.F., *Assistant Professor of Silviculture; Assistant Silviculturist, Agricultural Experiment Station* (1961), 1957.
John Ellison Brown, *Senior Clerk in Purchasing Inventory Control, Comptroller's Office* (1961).
Londo Henderson Brown, A.B., LL.B., LL.M., *Professor of Law* (1955), 1950.

ROBERT NATHAN BROWN, A.B., *Director of Intercollegiate Athletics and Assistant Professor of Physical Education* (1954), 1950.

SARA ANN BROWN, B.S., M.S., PH.D., *Professor of Home Economics Education* (1955), 1946.

THEADORE LUCEIN BROWNE, B.S., *Research Assistant in Surgery* (1961), 1957.

JOYCE L. BROYLES, *Teacher* (part-time) *University High School* (1959).

RANDALL LEE BROYLES, B.S., M.A.ED., *Instructor in Education; Teacher University High School* (1958).

KENNETH PIERPONT BRUNDAGE,* B.S., M.S., *Extension Farm Management Specialist, Cooperative Extension Service* (1954). (Leave of Absence August 15, 1961—June 30, 1962).

ALLEN ROY BRYANT, B.S., M.S., *Instructor in Education; Teacher, University High School* (1956).

ARTHUR CHARLES BUCK, SGT.MAJ., B.A., M.A., *Sergeant Major in Air Science* (1961).

TODD H. BULLARD, B.A., M.A., *Resident Director, Parkersburg Branch of West Virginia University; Assistant Professor of Political Science* (1961), 1956.

JERRY CAMERON BURCHINAL, B.S.C.E., M.S.C.E., *Associate Professor of Civil Engineering* (1957), 1946.

ARTHUR EDGAR BURFORD, A.B., M.S., PH.D., *Assistant Professor of Geology* (1960).

OTHMAR JOSEPH BURGER, B.S., M.S., PH.D., *Assistant Dean, College of Agriculture, Forestry, and Home Economics; Director of Resident Instruction, Division of Agriculture* (1959), 1950.

WILLIAM T. BURKE, JR., B.A., PH.D., *Associate Professor of Biochemistry* (1960).

ROBERT G. BURRELL, B.S., M.S., PH.D., *Assistant Professor of Microbiology* (1961).

ROBERT BARKER BURROWS, A.B., M.A., *Associate Professor of Speech; Director, Radio-Television Area* (1948).

MARY CATHERINE BUSWELL, B.A., M.A., *Assistant Professor of English* (1960), 1947.

RUSSELL CLARKE BUTLER, B.S.AGR., M.S., PH.D., *Professor and Chairman of Agricultural Education* (1956), 1944.

GEORGE WILLIAM BUTZ, JR., B.S., M.D., *Third-Year Resident in Surgery* (1961).

EDWARD FORD BYARS, B.M.E., M.C.E., PH.D., *Professor and Chairman of Theoretical and Applied Mechanics* (1960).

SHERMAN LOAR CALE, *Maintenance Manager, Evansdale Campus* (1960).

JANET DUFFIELD CALLAHAN, B.S., *Librarian, University High School* (1960).

CHARLES GLENN CAMBOR, B.S., M.D., PSYCHIATRY, *Psychiatric Lecturer in Social Work* (1959).

GEORGE G. CAMPBELL, B.S.E.M., M.S.E.M., *Petroleum Research Engineer, Engineering Experiment Station* (1956).

JOHN LLOYD CAMPBELL, M.S., D.D.S., *Professor and Chairman of Oral Surgery* (1960).

THOMAS CORWITH CAMPBELL, JR., A.B., M.A., PH.D., *Professor of Economics and Acting Dean of College of Commerce* (1961), 1948.

WILLIAM JAMES CANADY, B.S., M.S., PH.D., *Assistant Professor of Biochemistry* (1958).

GEORGE EUGENE CANNON, B.A., M.A., *Psychometrist, University Counseling Center; Clinical Psychologist, West Virginia Department of Mental Health* (1961), 1960.

ODILIE CANTILLANO Y VIVES, B.A., M.A., *Instructor in Spanish* (1959).

WILLIAM JOHN CARL, *Instructor Emeritus in Foundry Practice* (1943), 1920. (Deceased October 31, 1961).

LEO CARLIN, A.B., LL.B., *Professor Emeritus of Law*, (1955), 1916.

LORNA DOONE CARLIN, A.B., M.S., *Instructor in Mathematics* (1955), 1943.

WILLIAM T. CARLSON, B.S., M.S., *Instructor in Agronomy; Assistant in Agronomy, Agricultural Experiment Station* (1959).

JAMES FRANKLIN CARRUTH, B.S., M.S., PH.D., *Associate Professor of Psychology; Chief of Student Counseling Services* (1957), 1953.

WINCIE ANN CARRUTH, B.S., M.S., PH.D., *Professor and Chairman of Women's Physical Education* (1957).

ROY GEORGE CARTER, A.I.M.L.T., *Chief Medical Technologist in Hematology and Blood Bank, Clinical Laboratories, Medical Center* (1961).

MARIA HILLIARD CARTLEDGE, A.B., *Research Assistant in Agronomy and Genetics* (1954), 1952.

JOHN ANTHONY CARUSO, A.B., M.A., PH.D., *Associate Professor of History* (1961), 1950.

MICHAEL A. CARUSO, B.S., M.A., *Instructor in Education; Teacher, University High School* (1956).

Kenneth Llewellyn Carvell, B.A., M.F., D.For., *Associate Professor of Silviculture; Associate Silviculturist, Agricultural Experiment Station* (1956), 1953.

Robert Harry Case, B.S., *U.S. Army ROTC Librarian and Instructor in Military Science* (1961).

Reba White Castillos, A.B., A.M., *Instructor in Spanish, University Extension* (1960).

Carl Henry Cather, B.S.M.E., M.S.M.E., *Professor of Theoretical and Applied Mechanics* (1960), 1916.

Harold Malcolm Cather, B.S.M.E., M.S.M.E., M.E., *Professor of Mechanical Engineering; Mechanical Engineer, Engineering Experiment Station* (1960), 1919.

Charles Richard Chamberlain, B.A., M.D., *Instructor in Pathology* (1961).

William Orel Champney, B.S., M.S., *Assistant Professor of Agricultural Economics; Assistant Agricultural Economist, Agricultural Experiment Station* (1958).

Roger Vernon Chastain, D.D.S., *Assistant Professor of Operative Dentistry* (1960).

Simon B. Chandler, A.B., M.A., M.D., *Professor Emeritus of Anatomy* (1957), 1935. (Deceased November 1, 1961).

Shih-chieh Chen, B.S., M.S., *Assistant in Agricultural Biochemistry, Agricultural Experiment Station* (1960), 1959.

Mary Stare Chico, R.N., *Chief Relief and Night Nursing Supervisor* (1960),

William Henry Childs, B.S., M.S., Ph.D., *Professor and Acting Chairman of Horticulture; Horticulturist, Agricultural Experiment Station* (1960), 1931.

Oliver Perry Chitwood, LL.D., Ph.D., *Professor Emeritus of History* (1946), 1907.

Ned Jay Christensen, B.A., M.A., Ph.D., *Assistant Professor of Speech* (1960), 1959.

Wallace Wayne Chrisitensen, B.S.F., M.F., Ph.D., *Professor of Forest Economics; Forest Economist, Agricultural Experiment Station* (1960), 1956. (Resigned September 15, 1961).

Burr Clark, Jr., B.S., M.S., *Assistant in Agricultural Biochemistry, Agricultural Experiment Station* (1960).

Mary Dorcas Clark, A.B., M.D., *Physician, University Health Service* (1961).

Rhoda Mildred Shortridge Clark, A.B., M.S., M.A.L.S., *Senior Catalogue Librarian* (part-time) (1961), 1954.

Thomas Baird Clark, B.S.A., M.S., *Professor Emeritus of Poultry Science; Poultry Husbandman Emeritus, Agricultural Experiment Station* (1959), 1927.

James Harris Clarke, B.S.Agr., M.S.Agr., *Professor of Agricultural Economics; Agricultural Economist, Agricultural Experiment Station* (1960), 1939.

John Donald Clarkson, B.F.A., M.A., *Professor and Chairman of Art* (1961), 1948.

Roy Burdette Clarkson, B.S., A.B., Ph.D., *Assistant Professor of Biology* (1960), 1956.

Jesse Franklin Clovis, B.S.F., M.S., Ph.D., *Assistant Professor of Biology* (1957).

Vivian B. Cobun, B.S., *Assistant to the Comptroller* (1961), 1935.

Charles Nelson Cochran, A.B., M.S., *Assistant Professor of Mathematics* (1957), 1951.

Billy Lee Coffindaffer,* B.S., M.S., Ph.D., *Assistant State 4-H Club Leader, Cooperative Extension Service* (1956), 1950.

Charles Richard Coffman, B.S., *Superintendent, University Agronomy Farm* (1957).

Marilyn Helen Coffron, B.A., M.A., *Instructor in English* (1961).

David Dale Cole, B.S., M.A., *Instructor in Psychology* (1960), 1958.

George Henry Colebank, A.B., M.A., *Associate Professor Emeritus of Education; Principal* (retired) *University High School* (1950), 1928.

Raymond W. Coleman, B.B.A., M.B.A., Ph.D., *Professor of Economics and Management* (1952), 1948. (Leave of Absence August 1, 1961).

Robert Eugene Coley, B.A., M.A., *Instructor in English* (1959).

Armand Rene Collett, A.B., Ph.D., *Acting Chairman and Professor of Chemistry* (1961), 1924.

Clifford Warthen Collier, Jr.,* B.B.A., M.L.A., *Extension Landscape Architect, Cooperative Extension Service* (1960).

Edmond Byrl Collins, B.S.Ag.E., M.S.Ag.E., *Instructor in Agricultural Engineering; Assistant in Agricultural Engineering, Agricultural Experiment Station* (1960).

Henry D'Alton Collins, B.S., LL.B., LL.M., J.S.D., *Professor of Law* (1956), 1950.

Clyde Lemuel Colson, A.B., LL.B., S.J.D., *Professor and Dean of the College of Law* (1956), 1935.

Frank Girard Comerford, C.E., *Coordinator for Basic Refresher Courses in Charleston, W. Va., University Extension* (1953).

Donald R. Comley, D.D.S., *Instructor in Oral Surgery* (1961).

Raphael Joseph Condry, B.S., M.D., *Associate Professor of Medicine* (1961).
William Howard Conkle,* B.S., M.S., Ph.D., *Extension Horticulturist, Cooperative Extension Service* (1959), 1941.
Rex Boland Conn, Jr., B.S., M.D., B.Sc., M.S., *Assistant Professor of Medicine; Director of Clinical Laboratories, University Hospitals* (1960).
Victoria Sellens Conn, B.A., M.N., M.A., *Research Associate Professor of Nursing* (1961.)
Jerald Leonard Connelly, B.S., Ph.D., *Assistant Professor of Biochemistry* (1961).
Charles Caruthers Cook, B.S.M.E.ind., M.S.I.E., *Assistant Professor of Industrial Engineering* (1960), 1957.
Kermit Alderson Cook, A.B., M.A., Ph.D., *Professor of Secondary Education* (1959), 1935.
Ruth Elizabeth Cook, B.S.H.E., M.S.H.E., *Instructor in Education; Teacher, University High School* (1951).
Melvin Gerald Cooper, Capt, LL.B., M.A., *Assistant Professor of Air Science* (1959).
Jean McQuiston Coover, A.B., M.A., *Instructor in Mathematics* (1956), 1943.
Mullen Ogle Coover, A.B., M.S., *Instructor in Biology* (1961), 1950.
Walter Lee Coplin, B.M., M.M., *Assistant Professor of Music* (1952), 1947.
Alfred Clinton Core, B.S., M.S., *Assistant Professor of Pharmaceutical Chemistry* (1961), 1960.
Earl Lemley Core, A.B., M.A., Ph.D., D.Sc., *Professor and Chairman of Biology* (1948), 1928.
Beverly Claire Cortes, A.B., M.A., *Instructor in Speech* (1961).
Earl Eugene Corum, B.S., M.S., *Head Football Coach* (1960), 1950.
Louis Kenneth Countryman, A.A., B.A., M.D., *Chief Resident in Surgery* (1961).
Joyce Margaret Cowin, B.M., *Instructor in Music* (1961).
Russell Joseph Crane, B.S.Ed., M.S.Ed., *Assistant Football Coach* (1952).
Rachel Zinn Craycraft, B.S., *Staff Pharmacist, University Hospital Pharmacy* (1961).
N. W. B. Craythorne, M.B., B.Ch., *Assistant Professor of Anesthesiology* (1961).
David Raymond Creel,* *Photographer, Agricultural Experiment Station; Assistant Editor, Cooperative Extension Service* (1947).
John Reginald Cresswell, B.A., Ph.D., *Professor of Philosophy* (1949), 1929.
Howard O. Croasmun, B.S., *Financial Secretary, Office of Comptroller; Teaching Fellow, College of Commerce* (1956).
Stephen Fuller Crocker, A.B., M.A., *Professor of English and Chairman of Integrated Studies* (1948), 1931.
William Edward Crockett, B.S.Ch.E., M.S.Ch.E., Ph.D., *Assistant Professor of Electrical Engineering* (1961), 1956.
Edwin William Crooks, Jr., B.S., M.A., M.B.A., D.B.A., *Assistant Dean, College of Commerce; Associate Professor of Marketing* (1958), 1954.
Orrin Hartshorn Cross, A.B., M.S., Ph.D., *Associate Professor of Psychology* (1957), 1951.
George Edward Cullen, Jr., Capt., A.A., B.S.J., *Assistant Professor of Air Science* (1961).
A. B. Cunningham, A.B., M.S., Ph.D., *Professor of Mathematics* (1960), 1946.
Glennis Hudkins Cunningham, A.B., M.A., *Instructor in Education* (1956).
Gloria Jeanne Cunningham, B.S., *Instructor in Education; Teacher, University High School* (1958).
Robert Francis Curran, Capt., B.S., *Associate Professor of Military Science* (1960).
Richard Allen Currie, B.Sc., M.D., C.M., *Instructor in Surgery* (1961).
Quin Fischer Curtis, A.B., A.M., Ph.D., *Professor of Psychology; Chairman of Philosophy and Psychology* (1949), 1941.
Andrew Jackson Dadisman, B.S.A., M.S., Ph.D., *Professor Emeritus of Economics* (1957), 1914.
Stanley Everett Dadisman, A.B., LL.B., *Professor of Law* (1957).
Kathleen Ingrid Dahle, B.S., *Head Medical Technologist, University Hospital* (1961).
Richard Henry Dana, A.B., M.S., Ph.D., *Clinical Associate in Philosophy and Psychology* (1961).
Merle Evelyn Daugherty, A.B., M.A., *Instructor in English, Parkersburg Branch, W.V.U.* (1961).
Donald Davidson, B.S., D.D.S., M.S., *Assistant Professor of Oral Surgery* (1961).

Paul Colwell Davidson, B.A., M.D., *Senior Resident in Medicine* (1961).
Claude Jefferson Davis, A.B., M.A., Ph.D., *Director, Bureau for Government Research* (1961), 1957.
Hannibal A. Davis, A.B., M.S., Ph.D., *Professor of Mathematics* (1948), 1924.
John Boatman Davis, B.S., D.D.S., *Professor and Chairman of Prosthodontics* (1957).
Leonard McCutchan Davis, A.B., M.A., Ph.D., *Assistant Professor of Speech* (1958), 1949.
Lloyd Moore Davis, A.B., M.A., *Instructor in English* (1959).
Roland Parker Davis, S.B., Ph.D., *Dean Emeritus, College of Engineering* (1955), 1911.
Oreta Holbert Dawson, A.B., M.A., *Instructor in English* (1947), 1946.
Samuel Joseph Deal, B.S., M.S., Ph.D., *Assistant Professor of Microbiology* (1960).
Robert L. Decker, B.A., M.A., Ph.D., *Assistant Professor of Psychology* (1957), 1955.
Charles Leroy Delaney, *Instructor in Industrial Engineering* (1946).
John Henry Dempsey, A.B., D.D.S., *Instructor in Periodontics* (1960).
Doris Houser Denison, B.S., *Teacher* (part-time) *University High School* (1960).
Carl Dennler, Jr., B.S., M.A., *Assistant Professor of Accounting* (1957).
Walter Howard Dickerson, B.S.C.E., B.S.Agr.Eng., M.S.Agr.Eng., *Professor of Agricultural Engineering; Agricultural Engineer, Agricultural Experiment Station* (1957), 1953.
Edmund Charles Dickinson, A.B., J.D., *Professor Emeritus of Law* (1952), 1921.
Patricia A. Diehl, B.S.Nurs., *Instructor in Medical-Surgical Nursing* (1961).
Montelle Dietrich, B.S., M.S., *Assistant Professor of Home Economics* (1941), 1929.
John Leslie Dixon, B.S.M.E., B.S.E.E., *Instructor in Mechanical Engineering* (1961).
Nicoleen Nardacci Dodd, B.S., *Instructor in Education; Teacher, University High School* (1961).
Gideon Stanhope Dodds, B.A., M.A., Ph.D., *Professor Emeritus of Histology and Embryology* (1951), 1918.
Alan Chase Donaldson, B.A., M.S., Ph.D., *Assistant Professor of Geology* (1957).
Charles Gilbert Donaldson, B.S., *Instructor in Physical Education and Assistant Football Coach* (1956).
Phillip Barnard Donley, B.S., Cert.Phys.Therp., *Instructor in Physical Education; Assistant Athletic Trainer, Intercollegiate Athletics* (1960).
Robert Tucker Donley, A.B., LL.B., *Professor of Law* (1947), 1929.
Patrick Andrew Donnally, B.S.I.E., *Instructor in Industrial Engineering* (1960).
Carl Kester Dorsey, A.B., M.S., Ph.D., *Professor of Entomology; Entomologist, Agricultural Experiment Station* (1951), 1947.
Carleton Paul Dorsey,* B.S.Agr., M.S.Agr., *State Club Leader, Cooperative Extension Service* (1952), 1927.
Catherine McKelvey Dorsey, B.A., M.A., *Instructor in Education; Teacher, University High School* (1948), 1943.
J. Robert Dosier, B.S., M.A., *Instructor in Mathematics* (1959).
Samuel Charles Dotson, Jr., B.S., B.M., M.D., *Physician, University Health Service* (1960).
David William Dowdell, A.B., A.M., *Instructor in English* (1947), 1946.
Meta Michaelsen Downes, B.A., M.A., *Instructor in French* (1960).
Leslie Dozsa, D.V.M., *Associate Professor of Veterinary Science; Associate Veterinarian, Agricultural Experiment Station* (1961), 1957.
Barbara Adeline Drainer, B.A., M.A., Ed.D., *Assistant Professor of Art* (1957), 1952.
John William Draper, B.A., M.A., Ph.D., *Professor of English* (1929).
Kay Louise Draves, B.S., *Chief Medical Technologist, University Hospital* (1961).
Arno Paul Drucker, B.M., M.M., *Instructor in Music* (1959).
Ruth Landes Drucker, B.M., M.M., *Instructor* (part-time) *in Music* (1961).
Everett Charles Dubbe, B.S.E.E., *Associate Professor of Electrical Engineering* (1959), 1947.
Robert Standish Dunbar, Jr., B.S., M.S., Ph.D., *Professor of Statistics; Statistician, Agricultural Experiment Station* (1960), 1952.
Ray Oscar Duncan, A.M., Ed.M., Ed.D., LL.B., *Professor of Physical Education; Dean, School of Physical and Health Education, Recreation, and Safety* (1952).
Richard Edward Duncan, B.M., M.A., Ph.D., *Dean, School of Music* (1958).
Robert Barclay Dustman, Ph.D., *Dean Emeritus of the Graduate School* (1960), 1924.
James Joseph Dyar, A.B., M.S., Ph.D., *Assistant Professor of Biology* (1960). (Resigned June 30, 1961).

Ann Culley Dye, B.S.H.E., *Dietitian, Women's Dining Hall* (1937).
Arthur Pingree Dye, B.S.Agr., M.S., *Assistant Professor of Horticulture; Assistant Horticulturist, Agricultural Experiment Station* (1940), 1923.
Phyllis Gersbach Dye, B.M., M.M., *Instructor in Music* (1961).
James E. Dyson, Jr., B.S., M.S., Ph.D., *Assistant Professor of Microbiology* (1958).
George Washington Easley, B.S., M.D., *Clinical Instructor in Surgery* (1961).
Jason Clark Easton, B.A., M.A., Ph.D., *Professor of History* (1938).
Joy Bromberg Easton, B.S., M.A., *Instructor in Mathematics* (1955), 1948.
Jane Lee Echols, A.B., M.A., *Instructor in English* (1961), 1959.
Harold C. Edelston, A.B., M.S.S.W., *Lecturer* (part-time) *in Social Work* (1956).
David Everett Edwards, M.D., *Psychiatrist* (part-time) *University Health Service* (1959).
William August Ehrgott, B.S., M.D., *Associate Professor* (part-time) *of Pathology* (1959), 1949. (Resigned May 31, 1961).
John Eichenmuller, Jr., A.B., M.S., *Assistant in Plant Pathology, Agricultural Experiment Station* (1958).
Eugene Randall Elkins, A.B., *Senior Research Analyst, Bureau for Government Research* (1961), 1952.
John Carlisle Ellers, B.S., M.S., *Instructor in Chemistry* (1957).
Edward Sumner Elliott, B.A., M.S., Ph.D., *Associate Professor of Plant Pathology; Associate Plant Pathologist, Agricultural Experiment Station* (1961), 1953.
Kendall Clark Elliott, B.S., M.S.Agr.E., *Instructor in Agricultural Engineering; Assistant in Agricultural Engineering, Agricultural Experiment Station* (1954).
Joan Marie Ellis, B.A., M.A., *Assistant Curator, West Virginia Collection, University Library* (1957).
Richard Neal Ellis, B.S., M.A., *Instructor in Education; Teacher, University High School* (1961).
Helen Steele Ellison, A.B., M.S.S.W., *Psychiatric Social Worker, University Counseling Center and West Virginia State Department of Mental Health* (1958), 1954.
Robert Curtis Ellison, B.S.E.E., *Instructor* (part-time) *in Electrical Engineering* (1960). (Resigned May 31, 1961).
Helen L. Ellyson, A.B., *Instructor in Home Economics* (1961).
Joseph C. Emch,* B.S., M.S., *Extension Animal Husbandman, Cooperative Extension Service* (1953), 1947.
Roy Eugene Emerson, B.S., M.S., *Associate Professor of Agricultural Engineering; Associate Agricultural Engineer, Agricultural Experiment Station* (1957), 1940.
James DeWitt Emery, B.S. M.B.A., *Instructor in Economics* (1960). (Resigned July 25, 1961).
Jon Evan Engberg, B.M., M.M., *Instructor in Music* (1959).
Dorothy Catherine Engle, A.B., M.A., *Instructor in Education; Teacher, University High School* (1955).
Freda Barbara Engle, B.S.Nurs.Ed., A.M.Nurs.Ed., *Assistant Professor of Public Health Nursing* (1961).
Clyde Neville English, B.A., M.S.M., D.S.M., A.A.G.O., *Associate Professor of Music* (1953), 1945.
Grace Metzger English, B.A., *Reservation Clerk, Residence Halls* (1956).
Thomas Edson Ennis, A.B., M.A., Ph.D., *Professor of History* (1946), 1939.
Frank Livingston Evans, B.A., M.A., *Instructor in History* (1959).
Homer Clark Evans, B.S., M.S., Ph.D., *Professor and Chairman of Agricultural Economics and Rural Sociology; Agricultural Economist, Agricultural Experiment Station* (1960), 1949.
Philip James Faini, B.M., *Instructor in Music* (1961).
Harold Vincent Fairbanks, B.S., M.S., *Professor of Metallurgical Engineering; Metallurgical Engineer, Engineering Experiment Station* (1955), 1947.
Firouz Farahmand, M.D., *First-Year Resident in Pediatrics* (1961).
Stanley Farr, B.S.Ch.E., M.S., *Instructor in Physics* (1953), 1947.
Martha Fleming Fawcett, Std.Norm., *Social Director, Woman's Hall, North* (1959).
Marja Steadman Fear, M.A., *Associate Professor Emeritus of Speech* (1953), 1920.
Frank John Federovitch, M.A., *Instructor in Physical Education; Assistant Football Coach* (1960), 1958. (Resigned August 31, 1961).
Donald Charles Ferguson, B.S., M.S., Ph.D., *Assistant Professor of Clinical Psychology* (1961).
Remo Ferrante, B.S., M.A., *Instructor in German* (1960).

Frank Lawson Ferrell, M/Sgt., *Instructor in Military Science* (1959).
Edward Burton Findley, M/Sgt., *Supply Sergeant in Military Science* (1959).
Gordon B. Fink, B.A., M.D., *Assistant Professor of Pathology* (1961).
Howard Lee Finton, B.A., M.A., *Instructor in English* (1959).
Francis P. Fisher, A.B., *Lecturer in Journalism; Secretary-Manager, West Virginia Press Association* (1954).
Mildred Fairfield Fisher, *Administrative Assistant to Vice President-Medical Center* (1959), 1926.
Betty G. Fishman, B.A., M.A., *Lecturer in Economics* (1957), 1948.
Leo Fishman, B.A., M.A., Ph.D., *Professor of Economics and Finance* (1952), 1947. (Leave of Absence, September 1, 1961).
Homer Milton Fizer, B.S., M.S., *Instructor in Education; Teacher, University High School* (1960), 1940.
Mildred Evalena Fizer,* A.B., *State Girls' Club Agent, Cooperative Extension Service* (1953), 1946. (Leave of Absence, September 1, 1961—September 1, 1962).
William W. Fleming, A.B., M.A., Ph.D., *Assistant Professor of Pharmacology* (1960).
Clifton Wharton Flenniken, Jr., B.S., *Director of Physical Plant* (1961).
Edmund Berney Flink, M.B., M.D., Ph.D., *Professor and Chairman of Medicine* (1960).
Joe Edward Ford, A.B., M.A., *Assistant Professor of Speech; Technical Supervisor of University Theatre; Director, W. Va. High School Drama Festival* (1953).
O. Rex Ford, Ph.D., *Professor of Physics* (1943), 1925.
William Robert Fortney, B.S., M.S., Ph.D., *Associate Professor of Horticulture; Associate Horticulturist, Agricultural Experiment Station* (1960), 1956.
Joyce Anne Foss, B.S., M.S., *Assistant Administrative Director, University Dietetics Department* (1960).
Ruel Elton Foster, A.B., M.A., Ph.D., *Professor of English* (1957), 1942.
Robert Durant Fowler, B.S.E.E., B.S.I.E., M.S.I.E., *Associate Professor of Industrial Engineering* (1959).
Claud Mahlon Fraleigh, D.D.S., M.S.D., *Professor and Chairman of Periodontics* (1959).
Frederick William Franck, A.B., M.A., *Instructor in Romance Languages* (1960).
Lavina Mary Franck, B.S., M.S., *Associate Professor of Home Economics* (1959), 1957.
Edith Eloise Franklin, B.A., M.A., *Instructor in English* (1961).
Carl Maynard Frasure, B.A., M.A., Ph.D., *Dean of the College of Arts and Sciences; Professor of Political Science* (1961), 1927.
Ben Frank Freedman, B.F.A., M.A., *Instructor in Art* (1957).
Emile G. Frere, B.S., M.A., Ph.D., *Associate Professor of Romance Languages* (1961), 1947.
Ray Jerome Friant,* B.S., *Extension Agronomist* (Retired), *Cooperative Extension Service* (1960), 1922.
Harry Marion Fridley, B.S., M.S., Ph.D., *Professor of Geology* (1943), 1928.
Richard Adam Frisch, B.S., *Instructor in Theoretical and Applied Mechanics* (1960).
Jack Front, B.S., Cert.Phys.Therapy, *Chief Physical Therapist, University Hospital* (1960).
Alderson F. Fry, B.S., M.L.S., M.A., LL.B., *Librarian, Medical Center Library* (1954).
Nicholas William Fugo, A.B., M.S., Ph.D., M.D., *Professor and Chairman of Obstetrics and Gynecology* (1960).
Thompson R. Fulton, A.B., A.M., *Professor of Social Work* (1953), 1946.
Jack William Futrell, B.A., M.A., *Instructor in English* (1955).
Edsel Gainer,* B.S., M.S., *Assistant Extension Dairyman, Cooperative Extension Service* (1961).
Patrick Ward Gainer, A.B., M.A., Ph.D., *Professor of English* (1957), 1946.
Mannon Elihu Gallegly, B.S.A., M.S., Ph.D., *Professor of Plant Pathology; Plant Pathologist, Agricultural Experiment Station* (1960), 1949.
Alfred Freddie Galli, B.S.Ch.E., M.S.Ch.E., *Assistant Professor of Chemical Engineering* (1956), 1946.
Sidney Longman Galpin, B.S., M.S., Ph.D., *Professor Emeritus of Hydrology; Hydrologist Emeritus, Agricultural Experiment Station* (1957), 1927.
Edwin C. Gangloff, B.A., M.S., Ph.D., *Assistant Professor of Medical Biochemistry* (1955).
Louis Michael Garcia, Jr., *Photographer, Visual Education Service, Medical Center* (1961).

Louis Allen Garvin, Maj., B.S., *Assistant Professor of Air Science* (1960).
Avery Freeman Gaskins, A.B., M.A., *Instructor in English* (1958), 1954.
Grant Eaton Gauger, B.S., M.D., *Instructor in Gross and Neurological Anatomy* (1961).
Thomas William Gavett, B.B.A., M.S., Ph.D., *Associate Professor of Economics; Director, Institute of Industrial Relations* (1961), 1957.
Frederick Linck Geiler, B.Sc., M.Sc., *Professor of Pharmacy* (1950), 1928.
Hasan Tahsin Gencsoy, B.S.M.E., M.S.M.E., *Assistant Professor of Mechanical Engineering* (1957), 1949.
Clara Fay George, B.S.Pharm., *Pharmacist, University Health Service* (1951).
Vincent Frederick Gerencser, B.S., Ph.D., *Assistant Professor of Microbiology* (1961).
Walter Henry Gerwig, Jr., A.B., M.D., *Clinical Associate Professor* (part-time) *of Surgery* (1960).
Cyril D. Gettliffe, M.B., *Resident in Medicine* (1960).
Alfred David Ghaphery, B.S., M.D., *Resident in Surgery* (1961).
Eleanor Reid Gibbard, B.A., M.S., *Instructor in French* (1961).
Harold Allan Gibbard, B.A., M.A., Ph.D., *Professor and Chairman of Sociology* (1948).
John Arthur Gibson, Jr., B.S., Ph.D., *Professor of Chemistry* (1953), 1926.
Mickey Gibson, B.A., M.A., *Instructor in Sociology* (1960). (Resigned September 1, 1961).
Robert Carlton Gibson, B.A., M.A., Ph.D., *Assistant Professor of Political Science* (1961).
Alan M. Gilbert, B.A., M.H.A., *Assistant Director, University Hospital* (1960).
Bernard Gilbert, B.S., M.S., *Instructor in Mathematics* (1958).
Royal Clarence Gilkey, A.B., A.M., Ph.D., *Assistant Professor of Political Science* (1957).
William Harry Gillespie, B.S., M.S., *Instructor in Geology* (1958), 1957.
Chesla Armilla Gilmore, *Laboratory Technician, University Health Service* (1957).
Wilbert E. Gladfelter, A.B., Ph.D., *Assistant Professor of Physiology* (1961), 1959.
Mary Jane Glasscock, B.M., M.M., *Instructor in Education* (1947), 1943.
Eleanor M. Glenn,* B.S.H.E., *Assistant State Leader, Home Demonstration Work, Cooperative Extension Service* (1961), 1926.
Louis Michael Glick, M.D., *Clinical Instructor in Medicine* (1960).
Joseph Clay Gluck, B.A., B.D., *Director of Student Affairs* (1948), 1943.
Herman Godes, M.M., *Associate Professor of Music* (1960).
Helen Louise Ambler Godfrey, A.B., M.S., *Instructor in Mathematics* (1961), 1946.
John Ford Golay, B.A., M.A., D.Phil. (Oxon.), *Provost of the University; Dean of the Graduate School; Professor of History* (1961).
Erwin Goldberg, B.A., M.S., Ph.D., *Assistant Professor of Biology* (1958). (Resigned August 31, 1961).
Elizabeth Jane Goodall, A.B., M.A., *Associate Professor of History, University Extension* (1945).
Claude Arwe Goode, B.S., B.S.E.M., *Assistant Director of Mining Extension* (1961), 1956.
William Russell Goodge, B.S., M.A., Ph.D., *Assistant Professor of Gross and Neurological Anatomy* (1961), 1957.
Allen Wright Goodspeed, B.S., M.F., *Professor of Forest Management; Forester, Agricultural Experiment Station* (1949).
Joseph Arnold Golz, B.S., M.A., *Assistant Professor of Music* (1959).
Dean Roy Goplerud, B.A., M.D., *Instructor in Obstetrics and Gynecology* (1961).
Edwin Gould, B.S.Agr., *Entomologist in Charge of University Experiment Farm* (P.O. Kearneysville), *Agricultural Experiment Station* (1946), 1929.
Henry Wadsworth Gould, B.A., M.A., *Assistant Professor of Mathematics* (1961), 1958.
Danny Joe Goulding, A.B., M.A., *Coordinator of University Relations* (1960), 1958. (Resigned May 31, 1960).
Babette Graf, B.S., M.S., *Assistant Professor of Home Economics* (1961).
William Lee Graham, B.A., D.D.S., *Associate Professor of Oral Diagnosis* (1959).
William Lute Graves, Jr., B.A., B.M., M.A., Mus.Doc., *Assistant Professor of Music* (1960).
Thomas Davis Gray,* B.S., *Extension Landscape Architect* (Retired), *Cooperative Extension Service* (1959), 1919.

Jack Daniel Graybeal, B.S., M.S., Ph.D., *Assistant Professor of Chemistry* (1957).
Robert Greco, B.S., A.B., M.D., *Clinical Assistant Professor of Obstetrics and Gynecology* (1960).
Carolyn Kiddy Gregori, A.B., *Assistant Dietitian, Arnold Hall* (1961).
Lloyd Raymond Gribble, B.S., M.S., Ph.D., *Associate Dean, College of Arts and Sciences; Professor of Zoology* (1961), 1929.
Grace Margaret Griffin, A.M., *Professor Emeritus of Physical Education* (1957), 1923.
Lillian V. Gross, R.N., *Nurse, University Infirmary* (1960).
Ruth Brill Gross, B.S., M.S., *Psychometrist, Student Counseling Service* (1961).
Marshall Bernard Gunselman, B.S., M.S.Ed., *Assistant Professor of Education* (1961).
Roland Lee Guthrie, B.S.F., M.S., *Arboretum Assistant* (1959), 1956.
Albert C. Gwynne, B.S., M.S., *Assistant Professor of Physical Education and Head Athletic Trainer, Intercollegiate Athletics* (1946), 1934.
Raymond Michael Haas, B.S., M.B.A., D.B.A., *Assistant Professor of Marketing* (1961).
Virginia Pearl Hagemann, B.S., A.M., *Assistant Professor of Pediatric Nursing; Assistant to the Dean, School of Nursing* (1961).
Charles A. Haley, M/Sgt., *Instructor in Military Science; Assistant Rifle Team Coach* (1958), 1953.
Arthur A. Hall, B.S.M.E., *Professor Emeritus of Electrical Engineering* (1951), 1916.
George A. Hall, B.S., Ph.D., *Associate Professor of Chemistry* (1956), 1950.
James Lester Hall, A.B., M.S., Ph.D., *Professor of Chemistry* (1955), 1946.
John Edgar Hall, B.S., M.S., Ph.D., *Assistant Professor of Microbiology* (1960), 1958.
Judith Chatfield Hall, B.S., M.S., *Instructor in Mathematics* (1958).
Lillian Bailey Hall, *Dietitian, Woman's Hall* (1953), 1952.
Sam H. Hall, S/Sgt., *Administrative Assistant in Air Science* (1960).
F. Gerald Ham, A.B., M.A., *Associate Curator, West Virginia Collection, Library* (1958).
Paul W. Hamelman, A.B., M.B.A., *Assistant Professor of Management* (1960).
John Richard Hankins, A.B., M.A., *Instructor in English* (1960), 1956.
Roscoe Elton Hanna, Jr., B.S., *Supervisor of Industrial Extension; Assistant Director of Fire Service Extension* (1949), 1944.
Evan Merrill Hardin, *Head Warehouseman, Physical Plant Warehouse* (1956).
Nestor Carl Hardin, Jr.,* *Extension Specialist in Vegetable Gardening, Cooperative Extension Service* (1960), 1958.
Thomas Porter Hardman, M.A., LL.B., J.D., *Professor Emeritus of Law* (1957), 1913.
Marion Dolores Harless, A.B., M.A., *Instructor in Psychology* (1960).
John Barker Harley, B.S., M.D., *Assistant Professor of Medicine* (1955).
Harold H. Harper, B.S.Pharm., *Purchasing Expediter, Medical Center* (1961).
Kenneth Reed Harper, B.S., M.S., *Instructor in Education; Teacher, University High School* (1958), 1956.
Phyllis Ann Harper, B.S.H.E., M.S., *Senior Staff Dietitian, University Hospital* (1960).
Stephen Harrick, A.B., M.A., *Associate Professor of Physical Education; Head Coach of Baseball and Wrestling* (1955), 1924.
Ernest Keith Harris, S/Sgt., *Supply Sergeant in Air Science* (1958).
Stanley Robert Harris, A.B., M.S., *Assistant Registrar* (1953).
Edward Charles Harry, B.E.M.E., *Lecturer in Mechanical Engineering, Kanawha Valley Graduate Center of West Virginia University* (1959).
Charles Henry Hartley,* B.S., *State Club Leader* (Retired), *Cooperative Extension Service* (1933), 1914. (Deceased April 16, 1961).
Harvey H. Hartwig, Maj., B.S., *Executive Officer and Associate Professor of Military Science* (1957), (Resigned August 15, 1961).
H. Richard Hartzler, A.B., J.D., *Assistant Professor of Business Law* (1959).
John Jackson Harvey,* B.S., M.S., Ph.D., *Associate Professor of Agricultural Education; Training Leader, Cooperative Extension Service* (1961), 1953.
Virginia Courtney Harvey, B.S.H.E., *Dietitian, Terrace Hall* (1959).
Lee Earl Harville, SFC, *Assistant Supply Sergeant in Military Science* (1960).
Barbara Anne Hash, B.S., *Staff Pharmacist, University Hospital Pharmacy* (1960).
Ted Robert Hash,* B.S., *Extension Poultryman, Cooperative Extension Service* (1947), 1937.
Margaret V. Hastings, B.S., M.A., *Assistant to the Director of Business Affairs* (1961).
Fabry Livingstone Hawk, A.S.C.P., *Assistant Director, University Health Service Laboratory* (1956), 1935.

Donald Edward Hayhurst, A.B., M.Litt, Ph.D., *Associate Professor of Political Science* (1959), 1956.
J. Lester Hayman, Ph.C., B.S.Pharm, M.S., *Professor of Pharmacy* (1916), 1919.
Milton Tidd Heald, A.B., M.A., Ph.D., *Professor of Geology* (1960), 1948.
Lois Vivaneen Heflin, A.B., M.S., *Instructor in Mathematics* (1956).
Edgar Frank Heiskell, Jr., A.B., B.S., M.D., *Assistant Professor of Surgery; Physician* (part-time) *University Health Service* (1957), 1948.
Harry Oram Henderson, B.S., M.S., Ph.D., *Professor of Dairy Science* (Retired); *Dairy Scientist* (Retired), *Agricultural Experiment Station* (1960), 1919. (Deceased December 11, 1961).
Claire Young Henn, B.S., *Supervisor of Admitting Office, University Hospital* (1960).
Dora Fergusson Hennen, A.B., M.S., *Instructor in Mathematics* (1958), 1933.
James H. Henning, A.B., M.S., Ph.D., *Professor and Chairman of Speech* (1945).
Patricia Ann Henning, B.S., M.S., *Senior Reference Librarian* (1961), 1960.
Lyle E. Herod, A.B., M.S., *Assistant Registrar* (1956), 1947.
Francisco Herrera, A.B., M.A., *Associate Professor of Romance Languages* (1960). 1946.
Willis H. Hertig, Jr., A.B., M.A., *Instructor in Biology* (1960).
John William Hesen, A.B., M.S., B.S., M.D., *Physician, University Health Service and Athletic Department; Assistant Professor of Physical Education* (1959), 1957.
C. Gordon Hewes, B.A., M.S., Ph.D., *Associate Professor of Gross and Neurological Anatomy* (1960).
James Blake Hickman, B.S., M.S., Ph.D., *Associate Professor of Chemistry* (1956), 1946.
John Lewis Hicks, Jr., A.B., A.M., *Assistant Professor of English; Director of Freshman English* (1960), 1949.
Ruth Morrel Hicks, A.B., M.A., *Instructor in History* (1961).
A. Curtis Higginbotham, B.S., Ph.D., *Associate Professor of Microanatomy and Organology* (1957).
Leonard F. Higney, A/1C *Administrative Assistant in Air Science* (1960).
Lawrence Benjamin Hill, A.B., A.M., Ph.D., *Professor Emeritus of Education* (1957), 1918. (Deceased March 24, 1961).
Richard B. Hilts, B.M., M.M., *Assistant Professor of Music and Acting Chairman of Applied Music* (1960), 1956.
Milford Leroy Hobbs, M.D., *Professor and Chairman of Pathology* (1947). (Resigned June 30, 1961).
Charles Edward Hockenberry, B.S., M.S., *Assistant Business Manager of Intercollegiate Athletics* (1956), 1952.
Arthur Newsome Hofstetter, A.B., M.A., Ed.D., *Professor of Education* (1956), 1955.
Jacqueline Ann Hogue, B.S., M.S., *Program Director, Mountainlair* (1960).
Margaret Price Hoke, A.B., M.A., *Instructor in Integrated Studies and English* (1955).
Ruth Wheeler Holden, M.A., *Instructor in English* (1944).
Charles Thomas Holland, B.S.E.M., M.S.E.M., *Dean, School of Mines; Director of Mining and Industrial Extension; Professor of Mining Engineering* (1961), 1930.
Alice Joanne Holloway, B.A., Ph.D., *Assistant Professor of Psychology* (1961).
Sam Vernon Holroyd, B.S., D.D.S., *Instructor in Pharmacology* (1961).
Marsh H. Holt, B.S., M.D., *Resident in Surgery* (1961).
Frederick John Holter, A.B., M.A., Ph.D., *Professor and Chairman of Health Education and Graduate Studies* (1948), 1947.
Jo Ann Hook, B.S., *Food Service Manager, Mountainlair* (1960).
Ninnian Edward Hopson, B.S.C.E., *Inspector* (part-time) *in Civil Engineering* (1961).
Leo Horacek, B.M.E., B.M., M.M.E., Ph.D., *Assistant Professor of Music* (1960).
Donald James Horvath, B.S., M.S., Ph.D., *Associate Professor of Animal Science; Associate Animal Husbandman, Agricultural Experiment Station* (1960), 1957.
Stanley M. Hostler, B.A., M.A., *Labor Education Specialist, University Extension* (1959).
David Franklin Hotz, A.B., Ph.D., *Assistant Professor of Physics* (1960). (Resigned September 1, 1961).
Douglas W. Houston, A.B., M.A., Ph.D., *Assistant Professor of History* (1961).
Edward W. Houy, Capt., B.S., *Associate Professor of Military Science and Supply Officer in Military Science* (1959).
Agnes B. Hovee, B.A., M.A., *Director of Residence Halls* (1956). 1950.

John Weston Howard, A.B., A.M., *Assistant Professor of Dental Literature* (1959), 1950.
Martha Cummins Howard, A.B., A.M., *Instructor in English* (1960).
Herbert Henry Howenstein, *Research Technician in Agricultural Engineering* (1961), 1956.
Earl Hudelson, A.B., M.A., Ph.D., *Professor Emeritus of Education* (1959), 1920.
Donald Thedron Huffman, B.A., M.A., *Instructor in German* (1956).
Kathryn Huffman, A.B., M.S., *Assistant Chemist* (part-time), *Engineering Experiment Station* (1944).
Dolores Hughes, A.B., M.A., *Instructor in Psychology* (1958).
George Louis Humphrey, A.B., M.S., Ph.D., *Associate Professor of Chemistry* (1957), 1952.
Gertrude Humphreys,* A.B., *State Leader, Home Demonstration Work, Cooperative Extension Service* (1933), 1926.
Beatrice Hurst, A.B., M.A., *Associate Professor of Women's Physical Education* (1951), 1928.
James Franklin Huston, B.A., M.Letters, *Instructor in Commerce* (1956). (Resigned August 31, 1961).
Blanche Lucille Hutchinson, B.M., M.M., *Accompanist and Instructor in Physical Education* (1954).
Joseph M. Hutchison, Jr., A.B., M.S., *Assistant Professor of Recreation* (1961), 1957.
Betty Jo Hypes, B.S., M.A., *Instructor in English* (1960), 1956.
Harold Marteney Hyre, B.S., M.S., *Associate Professor of Poultry Science; Associate Poultry Husbandman, Agricultural Experiment Station* (1944), 1931.
Robert Lee Iden, *Production Manager, Office of Publications* (1961).
Lawrence Joseph Intravaia, B.M.Ed., M.M.Ed., *Assistant Professor of Music; Director of University Bands* (1953), 1950.
Thomas Stanley Isaack, B.B.A., M.B.A., D.B.A., *Professor of Management* (1960), 1951.
Norman D. Jackson, B.S.F., M.W.T., *Assistant Professor of Forest Utilization* (1961), 1953.
David Wood Jacobs, A.B., *Director, Bureau of Public Information; Executive Secretary, Alumni Association* (1938).
Vernon Rhodes James, *Lecturer in Journalism* (1953).
Walter H. Jarecke, B.S.Ed., M.Ed., Ed.D., *Director of Guidance and Professor of Education* (1949).
Oleg Jefimenko, B.A., M.A., Ph.D., Vordiplom, *Associate Professor of Physics* (1960), 1956.
Everett Milton Jencks, B.S., Ph.D., *Assistant Professor of Agronomy; Assistant Agronomist, Agricultural Experiment Station* (1957).
Charles R. Jenkins, B.S., M.S., *Assistant Professor of Civil Engineering* (1961).
Carl Edward Johnson, A.B., B.S., M.D., *Assistant Clinical Professor of Medicine* (1961), 1940.
Clyde Edgar Johnson, Jr., B.A., M.S., *Instructor in Biology; Research Assistant in Dairy Science* (1960), 1957.
Jay Ewers Johnson, Jr., B.S., M.B.A., C.P.A., *Assistant Professor of Accounting* (1961), 1956.
John Robert Johnson, M.S., *Research Assistant in Poultry Science* (1960).
Melvin Walter Johnson, Jr., B.S., M.S., Ph.D., *Associate Professor of Agronomy; Associate Agronomist, Agricultural Experiment Station* (1960), 1956.
Robert Joseph Johnson, M.D., *Professor and Chairman of Gross and Neurological Anatomy* (1957).
Shirley Evangeline Johnson, B.A., M.A., *Instructor in English* (1958). (Resigned September 1, 1961).
John Hubert Johnston, B.A., M.A., Ph.D., *Assistant Professor of English* (1960), 1954.
Nell Joiner, B.S., B.A., *Instructor in Maternity Nursing* (1961).
Barbara Jones, A.B., M.D., *Assistant Professor of Pediatrics* (1961).
Edwin Channing Jones, B.S.E.E., M.S.E.E., *Professor and Chairman of Electrical Engineering; Electrical Engineer, Engineering Experiment Station* (1948), 1925.
Ernest Lewis Jones, A.B., M.A., *Supervisor, Data Processing Center* (1960), 1955.
John Evan Jones, B.S., M.D., *Direct U.S.P.H.S. Trainee in Endocrinology* (1960).

Margaret M. Jones, *Assistant, Certification and Records, Registrar's Office* (1953), 1930.
Mary Rose Taylor Jones, B.S., M.S., *Associate Professor of Home Economics* (1959), 1941.
Owen Lloyd Jones, A.B., M.S., *Instructor in Chemistry* (1960), 1957.
Patricia Kelly Jones, A.B., D.B., *Executive Secretary, University Y.W.C.A.* (1960).
Paul Russell Jones, B.Cer.E., M.S., *Professor of Ceramic Engineering* (1957), 1947.
Richard E. Jones, M.D., *Associate Professor and Chairman of Anesthesiology* (1960).
Ruth K. Jones,* B.S., M.S., *Extension Clothing Specialist, Cooperative Extension Service* (1946), 1941.
Gerald Alvin Jung, B.S., M.S., Ph.D., *Assistant Professor of Agronomy; Assistant Agronomist, Agricultural Experiment Station* (1958).
Thomas James Karras, B.S.E.E., M.S., *Instructor in Electrical Engineering* (1960), 1950. (Resigned May 31, 1961).
William K. Katz, B.S., M.S., *Assistant Professor of Education* (1959).
Barry Jay Keagy, B.S.M.E., *Instructor in Mechanical Engineering* (1961).
Louise Keener, B.A., *Comptroller and Director of Business Affairs* (1954), 1929.
Robert Clay Kellison, B.S.F., *Forest Superintendent, Division of Forestry* (1959). (Resigned September 16, 1961).
Elmer Ellsworth Kelln, B.S., D.D.S., M.S.D., *Associate Professor of Oral Pathology* (1960).
Anna Mary Kelly, *Librarian, College of Law* (1959), 1958.
Warren George Kelly, B.S.Agr., M.S.Agr., *Assistant Professor of Agricultural Education* (1957).
Claude Ray Kemper,* B.S.Agr., M.S.Agr., *District Agent, Cooperative Extension Service* (1955), 1946.
Eddie Clifton Kennedy, A.B., A.M., D.Ed., *Professor of Education; Director of Student Teaching; Chairman of Elementary Education* (1960), 1953.
Alexander Donovan Kenny, B.Sc., M.S., Ph.D., *Associate Professor of Pharmacology* (1959).
James Albert Kent, Ph.D., *Professor of Chemical Engineering; Nuclear Engineer, Engineering Experiment Station; Director, Nuclear Engineering Program* (1958), 1954.
Harold Neely Kerr, A.B., M.Litt., Ph.D., *Associate Professor of Sociology* (1959), 1946.
Harold Edward Kidder, B.S., M.S., Ph.D., *Professor of Animal Science; Animal Husbandman, Agricultural Experiment Station* (1960), 1954.
George Smith King, Jr., B.S. M.S., *Instructor in Physical Education; Head Basketball Coach* (1960), 1958.
Lois Joanne Kinley, B.S., M.S., *Chairman of Biochemistry* (1960), 1957. (Resigned August 10, 1961).
Charles William Kinnaird, B.S., M.A., *Instructor in English* (1957).
Frank Eugene Kirby, B.A., Ph.D., *Assistant Professor of Music* (1961).
Jean Marion Stein Klein, B.S.L.S., M.A., Senior Catalogue Librarian (1960). (Resigned October 3, 1961).
Maurice Goodrich Klein, B.S.L., *Instructor* (part-time) *in Speech* (1960). (Resigned September 1, 1961).
Evans Lee Kline, B.S.E.E., *Instructor in Electrical Engineering* (1961).
William Gene Klingberg, A.B., M.D., *Professor and Chairman of Pediatrics* (1960).
Gladys Wasmuth Knapp,* B.S.H.E., M.S., *Extension Home Management Specialist* (1949), 1935.
John Oliver Knapp, B.S.Agr., *Assistant to the Dean, College of Agriculture, Forestry, and Home Economics* (1961), 1917.
Christian Burdick Koch, B.S.F., M.S.F., *Assistant Professor of Forestry; Assistant Forester, Agricultural Experiment Station* (1955), 1951. (Leave of Absence September 1, 1961—August 31, 1962).
Evelyn Maude Kocher, B.A., B.S.L.S., M.S.L.S., *Senior Catalogue Librarian* (1958).
Walter Allos Koehler, B.S.Ch.E., Ch.E., M.S., Ph.D., *Director of the Engineering Experiment Station and Associate Dean, College of Engineering* (1961), 1924.
Donald Maurice Koppel, B.S., M.D., *Clinical Instructor* (part-time) *in Medicine* (1960).
Reginald Frederick Krause, A.B., B.S., M.S., Ph.D., M.D., *Professor and Chairman of Biochemistry* (1951).

Frances Catherine Krauskopf, A.B., A.M., Ph.D., *Assistant Professor of History* (1956).
John Belshaw Kreer, B.S.E.E., M.S.E.E., Ph.D., *Professor of Electrical Engineering* (1960), 1959.
Helen Louise Kudla, B.S., *Head Nurse, University Health Service* (1957), 1950.
Herbert Marvin Kulman, B.S., M.F., Ph.D., *Assistant Professor of Entomology; Assistant Entomologist, Agricultural Experiment Station* (1959).
Joan Gilbert Kulman, B.S.H.E., *Instructor in Home Economics* (1959).
Margaret Cornelia Ladwig, A.B., Ed.M., Ph.D., *Placement Advisor* (1952), 1949.
Richard Willoughby Laird, B.S.E.M., M.S.E.M. *Associate Professor of Mining Engineering (Acting Dean, School of Mines*—February 20, 1961 to August 1, 1961), (1953), 1947.
Carlos Miguel Lajara, M.D., *Second-Year Resident in Pathology* (1961).
Bernice Leil Lambert, *Social Director, Women's Hall, Center* (1959), 1952.
Edgar Albert Lavergne, B.Sc., M.A.Sc., Ph.D., *Lecturer in Chemical Engineering, Kanawha Valley Graduate Center of W.V.U.* (1959).
Beatrice B. Law, A.B., M.A., *Instructor in English* (1949).
John Joseph Lawless, B.S., M.A., Ph.D., M.D., *Director, University Health Service; Associate Professor and Clinical Instructor in Medicine* (1956).
Charles Lester Lazzell, A.B., M.S., Ph.D., *Professor of Chemistry* (1961), 1919.
Julian Gilbert Leach, B.S.A., M.S., Ph.D., *Professor of Plant Pathology; Plant Pathologist, Agricultural Experiment Station* (1960), 1938.
Gordon Leslie Leckie, B.S.J., *Assistant Director, University News Service* (1961).
Marvin Robert Lee, B.S., M.A., *Instructor in Education; Teacher, University High School* (1956).
Gerald Lefkoff, B.S., M.M., Ph.D., *Assistant Professor of Music* (1961).
Victor Jacob Lemke, B.A., M.A., Ph.D., *Professor and Chairman of German* (1955), 1939.
Jessie Fortney Lemley,* B.S.H.E., *Associate State Leader, Home Demonstration Work, Cooperative Extension Service* (1951), 1942.
Joseph William Leonard, B.S., M.S., *Director, Coal Research Bureau* (1961).
Nell Lanhan Leonian, B.S.H.E., A.M., *Instructor in English; Associate Advisor for Foreign Students* (1947), 1931.
Mortimer Levine, B.A., M.A., Ph.D., *Associate Professor of History* (1961), 1955.
Walter Richard Lewis, B.S., M.S., Ph.D., *Professor and Chairman of Agricultural Biochemistry; Agricultural Biochemist, Agricultural Experiment Station* (1951).
Virgil Greene Lilly, A.B., M.A., Ph.D., *Professor of Psysiology; Physiologist, Agricultural Experiment Station* (1949), 1927.
Helen Whitesides Lindsay, B.S., M.S., *Instructor* (part-time) *in Home Economics* (1961), 1954. (Resigned September, 1961).
Hugh Alexander Lindsay, B.Sc., M.Sc., Ph.D., *Associate Professor of Physiology* (1960), 1955.
William Albert Lippold, B.S.E.E., *Instructor* (part-time) *in Electrical Engineering* (1960). (Resigned May 31, 1961).
German Lizarralde, M.D., *First-Year Resident in Medicine* (1961), 1960.
Robert L. Lochmueller, B.S., M.S., *Instructor in Physical Education; Assistant Basketball Coach* (1961).
Thomas A. Loftus, A.B., M.D., *Professor and Chairman of Psychiatry* (1961).
J. Everett Long, A.B., A.M., *Registrar of the University; Chairman of Committee on Admissions* (1945), 1929.
Thomas Richard Long, B.S.M.E., *Instructor in Mechanical Engineering* (1958).
Alfred Delbert Longhouse, B.S., M.S., Ph.D., *Professor and Chairman of Agricultural Engineering; Agricultural Engineer, Agricultural Experiment Station* (1945), 1938.
Willard Dean Lorensen, B.A., LL.B., LL.M., *Associate Professor of Law* (1959).
Frank Edell Loringe, Jr., B.M., M.M., *Assistant Professor of Music; Acting Chairman of Theory and Composition* (1960), 1950. (Leave of Absence September 8, 1961).
Rosalie Virginia Losh, R.N., *Head Nurse, Surgical Unit* (1960).
Frederick Jackson Lotspeich, B.S., M.S., Ph.D., *Associate Professor of Biochemistry* (1959), 1956.
Wilma Jean Loudin, B.S.Ed., M.S., *Instructor in Mathematics* (1960), 1955.
Bethoiene Frances Love, B.S., M.S., *Assistant Professor and Associate Director of Medical Technology* (1958), 1955.

Charles Samuel Lowe, B.S., M.S., Ph.D., *Research Associate, Agricultural Biochemistry and Nutrition, Agricultural Experiment Station* (1961).
Vernon Fred Lowenberg, A.B., M.S., *Instructor in Mathematics* (1953).
Russell Vail Lucas, Jr., B.A., M.D., *Assistant Professor of Pediatrics* (1961).
John Luchok, B.S.J., *University and Agricultural Experiment Station Editor* (1953), 1950.
Wayne Wesley Luchsinger, B.S., M.S., Ph.D., *Associate Professor of Biochemistry; Associate Biochemist, Agricultural Experiment Station* (1960).
John Charles Ludlum, B.S., M.S., Ph.D., *Professor of Geology* (1956), 1946.
Marlyn Edward Lugar, A.B., LL.B., J.S.D., *Professor of Law* (1951), 1939.
Virginia Gilmore Madigan Luikart, B.S., *Circulation Assistant, Library* (1951), 1930.
Ann Louise Lynch, B.A.Med.Rec., *Medical Record Librarian* (1960).
Gale H. Lyon,* B.S., M.S., *Program Leader, Economic Development, Cooperative Extension Service* (1961), 1954.
Rogers McAvoy, B.A., M.A., *Instructor in Education* (1961).
James Leonard McBee, Jr., B.S., M.S., Ph.D., *Assistant Professor of Animal Science; Assistant Animal Husbandman, Agricultural Experiment Station* (1959).
Arthur Cook McBride, A.B., A.M., Docteur de l'Universite de Bordeaux, *Professor of Romance Languages* (1960), 1926.
Francis Hill McClung, B.S., M.S., *Assistant Professor of Education, University Extension* (1956).
Joseph Dwight McClung, B.S.E.E., B.S.E.M., M.S.E.M., *Associate Professor of Mining Engineering* (1961), 1941.
Ernie Bevan McCue, A.B., M.A., *Director of University Extension and Labor Extension* (1952), 1947.
Emma Williamson McCutcheon, *Social Director, Arnold Hall* (1957), 1955.
Mary Adeline McDaniel, A.B., M.A., *Administrative Assistant, Office of the President* (1957), 1941.
Elizabeth Adams McEnney, B.M., M.M., *Assistant Professor of Music* (1949).
Oliver Claude McGhee, B.S., M.S., *Assistant Professor of Agricultural Education* (1961).
Bernard Ronald McGregor, B.S., M.F.A., *Assistant Professor of Music* (1950), 1935.
Kenneth Dale McIntosh, B.S., M.S., *Assistant Agricultural Economist, Agricultural Experiment Station* (1957). (Leave of Absence October 1, 1961—June 30, 1962).
Gaynelle McKinney, B.S., M.S., *Assistant Professor of Medical-Surgical Nursing* (1961).
Lois Jane McKinney, B.S., *Assistant to Director of Personnel* (1960).
George Aiken McLaren, B.S., M.S., Ph.D., *Professor of Agricultural Biochemistry and Nutrition; Agricultural Biochemist, Agricultural Experiment Station* (1959), 1955.
Earl Glen McLaughlin, A.B., M.A., *Instructor in Education* (1959).
William H. McMillion, B.S., *Assistant Comptroller* (1958), 1952.
Ronald Bruce McPherson, B.S.C.E., *Instructor* (part-time) *in Civil Engineering* (1960).
Robert F. McWhorter, B.S., M.S., *Director of Mountainlair* (1959).
Denis William Herbert MacDowell, B.S., M.S., Ph.D., *Assistant Professor of Chemistry* (1959).
Sam Madia, B.S., M.A., *Instructor in Education; Teacher, University High School* (1955).
Charles S. Mahan, A.B., M.D., *Clinical Assistant Professor of Obstetrics* (1960).
John Friend Mahoney, B.S., M.S., Ph.D., *Assistant Professor of Chemical Engineering* (1960).
Dorothy Mae Major, B.S., M.A., Ed.D., *Dean, School of Nursing* (1960).
Hisham Salim Majzoub, B.Sc., M.D., *First-Year Resident in Surgery* (1961).
Warren Francis Manning, A.B., A.M., Ph.D., *Professor of Romance Languages; Committee Chairman of Romance Languages* (1952), 1928.
Martin Matheny Mansperger, B.S.in Ed., M.A., *Assistant Professor of Education, University Extension* (1952).
Emil Louis Mantini, B.A., M.S., M.D., *Resident in Surgery* (1960).
James Clifford Markel, B.S., M.S., *Assistant Professor of Physical Education; Swimming and Soccer Coach* (1961).
Ray Stanley Marsh, B.S.Agr., A.M., *Professor of Horticulture; Horticulturist, Agricultural Experiment Station* (1960), 1936.
Robert James Marshall, M.D., M.R.C.P.I., M.R.C.P., *Associate Professor of Medicine* (1961).

Don Thomas Martin, B.S., *Teacher* (part-time) *University High School* (1961).
Donald Clayton Martin, B.S., M.S., Ph.D., *Lecturer in Physics, Kanawha Valley Graduate Center of W.V.U.* (1959).
Glenn Fayette Martin, *Instructor in Industrial Engineering* (1940).
Hubert E. Martin, A.B., D.D.S., *Clinical Instructor in Orthodontics* (1961).
John Hope Martin, B.S.E.E., M.S.E.E., *Assistant Professor of Electrical Engineering* (1960), 1957.
William Gilbert Martin, B.S., M.S., *Instructor in Poultry Science* (1960), 1958.
Oneita Frances Mascioli, R.N., *Surgery and Central Service Nursing Supervisor* (1961), 1960.
Carmine Charles Mascoli, B.S., M.S., Ph.D., *Assistant Professor of Microbiology* (1960).
W. Annette Massey, R.N., B.S.Ed., M.S.N., *Assistant Professor of Psychiatric Nursing* (1961).
S. Samuel Maurice, B.A., M.S., Hlth.Saf.Dirs., *Assistant Professor of Physical Education and Director of Intramural Activities* (1958).
George Ralph Maxwell, B.S., M.D., *Assistant Professor* (part-time) *of Physical Diagnosis* (1936), 1924.
Boleslaw Mazur, B.S., D.D.S., M.S., *Assistant Professor of Crown and Bridge Dentistry* (1961).
Charles Robert Means, Capt., B.S., *Associate Professor of Military Science; Rifle Team Coach* (1959).
Mary Frances Mertz, B.S., M.A., *Instructor in English* (1960). (Resigned September 1, 1961).
Donald Lee Michael, B.S.C.E., *Instructor* (part-time) *in Civil Engineering* (1961).
Annette Mignogna, R.N., *Head Nurse in Pediatrics* (1960).
D. Franklin Milam, A.B., B.S., M.D., *Associate Professor of Urology* (1960).
Betty Louise Miller, B.S.Cli.E., M.S., *Instructor in Mathematics* (1957).
Delmas Ferguson Miller, A.B., M.S., Ph.D., *Professor of Education; Chairman, Secondary Education; Director, University High School* (1958), 1949.
Floyd Waldo Miller, A.B., B.S.L.S., M.A., M.S.L.S., *Chief Reference Librarian* (1958).
Lawrance Samuel Miller, B.A., M.D., *Assistant Professor of Orthopedic Surgery* (1960).
Martha Louise Miller, B.S.N., M.S.N.Ed., *Assistant Professor of Nursing* (1960). (Resigned July 1, 1961).
Paul Ausborn Miller, B.S.Agr., M.A., Ph.D., *President of the University* (1962), 1938.
Susan Charlotte Millis, B.S., M.S., *Instructor in Home Economics* (1960). (Resigned September 1, 1961).
Jack Gillespie Milne, Col., B.A., *Professor of Air Science* (1958).
Frederick William Miltenberger, M.S., M.D., *Resident in Surgery* (1961).
Richard Allen Milum, B.S.Ed., M.A., *Instructor in English* (1961).
William Sherman Minor, A.B., D.B., *Associate Professor of Philosophy* (1946).
Michael K. Mischaikow, M.A., Ph.D., *Assistant Professor of Economics* (1960).
Charlie Robertson Mitchell, B.S.C.E., *Instructor in Civil Engineering* (1958). (Resigned August 30, 1961).
Kathleen Ayers Mitchell, Std.Norm., *Social Director, Women's Hall* (1942), 1940.
Ralph Gerald Mitchell, B.S., M.S., Ph.D., *Associate Professor of Dairy Science; Associate Dairy Scientist, Agricultural Experiment Station* (1960), 1957.
Charles Ernest Modlin, B.A., M.A., *Instructor in English* (1960).
Za-Lee Moh, B.S.C.E., M.S.C.E., Ph.D., *Assistant Professor of Civil Engineering* (1961).
Fred A. Molby, Ph.D., *Professor Emeritus of Physics* (1948). 1920.
Ethel C. Montiegel, B.A., M.S., *Instructor in Biology* (1956).
Ellis Edwin Mood, *Flight Instructor in Aero-Space Engineering* (1956).
Byron Wayne Moore,* B.S.Agr., *Associate Extension Poultryman, Cooperative Extension Service* (1955), 1947.
Dane Wood Moore, Jr., B.S., M.S., *Chief Technologist in Microbiology Clinical Labs* (1960), 1954.
Walter Harrison Moran, Jr., B.A., B.S., M.D., *Instructor in Surgery* (1960).
Donald Stephen Morelli, B.S., M.A., *Assistant Coordinator of Rehabilitation Counseling* (1961).
Bernice Carolyn Morgan, R.N., *Assistant Operating Room Supervisor* (1960).
David Zackquill Morgan, B.S., M.D., *Second-Year Resident in Internal Medicine* (1961), 1953.

Arthur Lewis Morris, Jr., A.B., *Financial Secretary, Office of Comptroller* (1960).
Barbara Jean Morris, R.N., *Head Nurse, Station 51, University Hospital* (1960).
Clyde McMahon Morris, B.S., M.S., Ph.D., *Assistant Professor of Education; Executive Secretary, W. Va. School Boards Association* (1959).
Joseph L. Morris,* B.S., M.Agr., *District Agent, Cooperative Extension Service* (1955), 1954.
Samuel John Morris, M.D., *Professor Emeritus of Physical Education* (1955), 1912.
William O. Morris, A.B., LL.B., *Professor of Law* (1960), 1958.
Richard Harvey Morrison, B.S., M.S., *Instructor in Chemistry* (1959).
Joe Francis Moss, A.B., M.A., *Instructor in Art* (1960).
Albert Mowlem, A.B., M.D., Ph.D., *Assistant Professor of Surgery* (1961).
Mildred Iona Moyers, A.B., M.A., M.S.L.S., *Chief Acquisition Librarian* (1959), 1955.
Caroline Turton Mudd, B.S.Ed., M.S.W., *Assistant Professor of Social Work; Director of Field Work* (1957).
Beth Palmer Muffly, B.S., M.S., *Assistant Professor* (Retired) *of Home Economics* (1957), 1927.
Foster Glenn Mullenax,* B.S.Agr., *Associate Extension Editor, Cooperative Extension Service* (1953), 1950.
Robert Ferguson Munn, A.B., M.A., Ph.D., *Director of University Libraries* (1957), 1952.
Robert Styring Mutch, B.S., M.D., *Clinical Instructor* (part-time) *in Medicine* (1961).
Chester William Muth, B.S., Ph.D., *Associate Professor of Chemistry* (1956), 1949.
Galen Sheets Myers,* B.S.Agr., M.S.Hort., *District Agent, Cooperative Extension Service* (1952), 1935.
Leroy Orner Myers, B.A., M.A., *Assistant Professor of Geography* (1948).
Lawrence E. Nanns, B.S.Ed., M.Ed., *Instructor* (part-time) *in Education* (1960). (Resigned May 31, 1961).
Victor Mario Napoli, M.D., *Instructor in Pathology* (1961).
Oliver Meader Neal, Jr., B.S., Ph.D., *Associate Professor of Horticulture; Associate Horticulturist, Agricultural Experiment Station* (1959), 1942.
Charles David Neel, B.A., M.A., *Instructor in Speech; Business and Publicity Supervisor for University Theatre; Director, University Theatre* (1960).
Elizabeth Brownfield Neel, *Administrative Assistant, Library* (1949), 1936.
Robert Hudkins Neff, B.S., M.S., *Instructor in Education* (1957), 1955.
Elmer Joseph Neidermeyer, Maj., B.S., *Executive Officer in Military Science* (1959).
Stanley John Nels, B.S.J., *Associate University and Agricultural Experiment Station Editor* (1961), 1951.
Donald Earl Nelson, B.S., M.W.T., *Instructor in Wood Technology* (1961).
George Humphry Nelson, A.B., M.S., Ph.D., *Instructor in Biochemistry* (1958).
John W. Nelson, A.B., M.D., *Assistant Professor of Medicine and Chairman of Neurology* (1961).
Ernest Joseph Nesius,* B.S.A., M.S.A., Ph.D., *Dean, College of Agriculture, Forestry, and Home Economics; Director, Cooperative Extension Service* (1961), 1960.
Paul Emmett Nesselroad, B.S., M.S., *Assistant Agricultural Economist in Farm Management, Agricultural Experiment Station* (1959), 1954. (Leave of Absence October 1, 1960—June 30, 1962).
Joseph Newhouse, B.S., M.D., *Assistant Professor of Economics* (1957), 1955.
David Creel Nichols, II, B.S.J., M.A., *Assistant Director, Bureau of Public Information and University News Service* (1960), 1959.
E. Grant Nine, A.B., M.S., *Instructor in Education; Principal, University High School* (1960), 1956.
Wilda Hoard Noel, B.S.H.E., *Executive Housekeeper and Dietitian, Arnold Hall* (1956), 1954.
Ruth Douglas Noer, B.S., M.S., *Professor of Home Economics* (1960), 1925.
Francena L. Nolan, Ph.D., *Professor of Home Economics; Director, Division of Home Economics* (1961).
Charles Norman, B.S., M.S., Ph.D., *Professor of Biology; Dairy Scientist, Agricultural Experiment Station* (1961), 1953.
William Laurus Northern,* B.S., M.Agr., *Extension Dairyman, Cooperative Extension Service* (1956), 1951.
David W. Northup, A.B., A.M., Ph.D., *Professor and Chairman of Physiology* (1949), 1935.

Robert Julian Nottingham, *Clinical Assistant Professor of Pediatrics* (1960), 1958. (Resigned July 31, 1961).
Honora MacArthur Noyes, B.A., B.Ed., Ed.D., *Assistant Professor of Secretarial Studies* (1957). (Resigned May 31, 1961).
G. Robert Nugent, A.B., M.D., *Assistant Professor of Surgery, Division of Neurosurgery* (1961).
Frank Denis O'Connell, B.S., M.S., Ph.D., *Assistant Professor of Pharmacognosy* (1957).
James Pierce O'Leary, Jr., B.M.E., *Instructor in Mechanical Engineering* (1960).
Margaret Eloise Olexa, R.N., B.S., *Nurse, University Infirmary* (1960).
Farrel John Olsen, Jr.,* B.S., M.S., Ph.D., *Extension Agronomist, Cooperative Extension Service* (1961).
Norman Olaf Olson, D.V.M., *Professor of Veterinary Science; Veterinarian, Agricultural Experiment Station* (1948).
J. Estelle O'Malley, R.N., *Nurse, University Infirmary* (1960).
Angelo Joseph Orlandi, B.A., M.A., *Instructor in Education; Teacher, University High School* (1959).
Edwin Orr, B.S.M.E., *Superintendent of Maintenance, Physical Plant* (1961), 1949.
James Edwin Overberger, B.S., D.D.S., M.S., *Assistant Professor of Dental Materials* (1957).
Mary Nadine Page, M.A., *Assistant Professor of English* (1946), 1925.
Jerome Forest Parmer, B.S.M.E., M.S.M.E., *Assistant Professor of Mechanical Engineering* (1960), 1957.
Dickson Ward Parsons, A.B., M.S., Ph.D., *Professor Emeritus of Agricultural Education* (1951), 1923.
Homer Patrick, B.S., M.A., Ph.D., *Professor and Chairman of Poultry Science; Poultry Husbandman, Agricultural Experiment Station* (1957).
Charles Edwin Patton, A.M., *Professor of Art* (1951), 1939.
Armine Deane Paul, B.S., Ph.D., *Associate Professor of Chemistry* (1961), 1955.
Helen Mary Pavlegh, B.S., M.A., *Assistant in Microbiology* (1954), 1943.
Arthur Stephen Pavlovic, B.E.E., M.S., Ph.D., *Assistant Professor of Physics* (1959).
Mary Jane Bryan Pearse, B.A., M.S., *Instructor in Physical and Health Education, Recreation, and Safety* (1961), 1958.
Roger Waterman Pease, B.S., M.S., *Assistant Agricultural Economist, Agricultural Experiment Station* (1955), 1947.
Kenneth Earl Penrod, B.S., Ph.D., *Vice-President-Medical Center and Professor of Physiology* (1959).
W. Clement Percival, B.S., M.S., Ph.D., *Assistant Dean, College of Agriculture, Forestry, and Home Economics; Director, Division of Forestry; Professor of Forestry; Forester, Agricultural Experiment Station* (1959), 1934.
Virginia Taylor Perry, A.B., M.A., M.S.L.S., *Chief Circulation Librarian* (1954), 1946.
Jane Rhodes Pestun, B.M., M.M., *Instructor in Music* (1945), 1942.
Hand Del Peters, A.B., M.S., *Associate Professor of Mathematics* (1957), 1941.
Jo Ann Watkins Peterson, *Librarian, Bureau for Government Research* (1960), 1957. (Resigned May 31, 1961).
Mason Marcus Peterson, B.S.E.E., *Associate Professor of Electrical Engineering* (1948).
Thelma Rose Petracca, B.S., *Instructor in Medical Technology* (1961).
Helen Purinton Pettigrew, B.A., M.A., Ph.D., *Associate Professor of English* (1955), 1921.
Clifford N. Peltz, A.B., Ed.M., Ed.D., *Assistant Professor of Education* (1959).
Philip A. Phar,* B.S., M.S., *Assistant Extension Animal Husbandman, Cooperative Extension Service* (1961).
George Richard Phillips, *Photographer, Bureau of Public Information* (1954).
Herbert Charles Phillips, A.F.A., M.L., *Senior Research Analyst, Bureau for Government Research* (1961).
James Edward Phillips, A.B., D.D.S., *Assistant Professor of Oral Diagnosis* (1961), 1959.
Ross Alonzo Phillips, B.Sc.in Agr., Bach.of Agr.Engr., M.Sc.in Agr.Engr., *Assistant Professor of Agricultural Engineering; Assistant Agricultural Engineer, Agricultural Experiment Station* (1955).
Ruth Marjory Phillips, A.B., M.D., *Assistant Clinical Professor of Pediatrics* (1961).
Edward Donn Piatt, B.S., M.D., *Instructor in Medicine* (1961).
Byrd Lea Pickens, A.B., M.A., *Assistant Circulation Librarian* (Retired), (1951), 1930. (Deceased November 20, 1961).

Justus Courtland Pickett, B.S., M.D., *Clinical Professor and Chairman of Orthopedic Surgery* (1960).

William Augustus Pierce, A.B., M.A., Ph.D., *Professor of Mathematics* (1961).

William Bryan Pierce, Jr., Maj., B.S., M.L., *Assistant Professor of Air Science* (1959).

Gordon Marshall Pitts, B.A., M.A., Ph.D., *Assistant Professor of English* (1960).

Helen Lester Plants, B.S.C.E., M.S.C.E., *Assistant Professor of Theoretical and Applied Mechanics; Editor, Engineering Experiment Station* (1956), 1947.

Berta Gertrud Plaut, B.A., B.S.L.S., *Senior Catalogue Librarian* (1953).

George Gordon Pohlman, B.S., M.S., Ph.D., *Professor and Chairman of Agronomy and Genetics; Agronomist, Agricultural Experiment Station* (1938), 1930.

Stanley Anthony Poleway, D.D.S., *Professor and Chairman of Pedodontics* (1959).

Peter Popovich, A.B., B.S., M.S., Ph.D., *Associate Professor of Chemistry and Premedical Adviser* (1960), 1946.

John Joseph Porter, B.S., *Assistant Manager, University Book Store* (1961), 1952.

Ira Deward Porterfield, B.S., M.S., Ph.D., *Professor and Chairman of Dairy Science; Dairy Scientist, Agricultural Experiment Station* (1956), 1946.

Donald Charles Portnoy, B.S., M.A., *Instructor in Music* (1959).

Enid Joan Pallant Portnoy, B.S., M.A., *Instructor in Speech* (1958). (Resigned May 31, 1961).

Oleta Reed Post, B.S., M.A., *Instructor in Education; Teacher, University High School* (1953).

Blanche Elizabeth Price, A.B., M.A., *Assistant Professor of Home Economics* (Retired), (1959), 1945.

Nancy Gibson Price, A.B., M.A., *Instructor in English* (1960). (Resigned April 30, 1961).

Paul Holland Price, A.B., M.Sc., Ph.D., *Professor of Geology; Director and State Geologist* (1960), 1930.

Cecil Benjamin Pride, A.B., M.D., *Clinical Professor of Surgery* (1960), 1926.

Cletis Pride, B.S.J., *Associate Director, Bureau of Public Information; Director University News Service* (1960), 1953.

Maynard Prince Pride, A.B., M.D., *Clinical Assistant Professor of Surgery* (1960), 1949.

Richard Lee Prillaman, Capt., B.S., *Assistant Professor of Military Science* (1960).

Bertha Browning Purinton, A.B., A.M., *Assistant Registrar* (Retired) (1949), 1919.

John Pushkarsh, Jr., A.B., A.M., *Instructor in Russian* (1955).

Eliza Jane Queen, *Social Director, Terrace Hall* (1960).

David Oliver Quinn,* A.B., M.S., *Extension Plant Pathologist and Entomologist, Cooperative Extension Service* (1956), 1953.

Jose M. Quintero Fossas, M.D., *Assistant Professor of Medicine* (1961).

Allen Huff Rakes, B.S., M.S., Ph.D., *Assistant Professor of Dairy Science; Assistant Dairy Scientist, Agricultural Experiment Station* (1960).

Betty Lou Ramsey,* B.S.H.E., M.S., *Extension Specialist in Home Management and Furnishings, Cooperative Extension Service* (1960), 1956.

Kenneth Vincent Randolph, B.S., D.D.S., *Dean, School of Dentistry* (1958), 1957.

Robert Edward Rankin, B.A., M.A., Ph.D., *Associate Professor of Psychology* (1961), 1954.

Charlotte Coulthard Reed, B.S., M.A., *Instructor in English* (1961), 1958.

Elizabeth Frost Reed, A.M., *Assistant Professor Emeritus of English* (1954), 1919.

James Cornelius Reed, *Supervisor of Purchasing and Inventory, Office of Comptroller* (1953), 1946.

Perley Isaac Reed, Ph.B., A.B., A.M., Ph.D., *Director and Professor Emeritus of Journalism* (1958), 1920.

Ronald Michael Reed, B.A., M.A., *Instructor in Speech; Technical Director of Theatre* (1961).

William Woodworth Reed, Jr., Maj., B.A., *Associate Professor of Military Science* (1959).

Albert Moore Reese, A.B., Ph.D., *Professor Emeritus of Zoology* (1946), 1907.

Charles David Reese, B.S., M.S., *Instructor in Agronomy; Assistant in Agronomy, Agricultural Experiment Station* (1960).

Florence K. Reese, A.B., B.S.L.S., M.A., *Professor and Chairman of Library Science* (1961), 1935.

Grady G. Reese, Capt., A.B., *Assistant Professor of Military Science* (1961).

Robert Leslie Reid, B.Sc., B.Agr., Ph.D., *Assistant Professor of Agricultural Biochemistry; Assistant Agricultural Biochemist, Agricultural Experiment Station* (1960), 1957.

William Henry Reid, B.S.F., M.F., *Associate Professor of Forest Utilization; Associate Forester, Agricultural Experiment Station* (1951).

Janet Elizabeth Remington, B.M., *Instructor* (part-time) *in Music* (1954).

Pauline Dawson Renforth, R.N., *Assistant Relief and Night Nurse Supervisor* (1960).

Robert Summers Reppert, B.S., *Geologist, Engineering Experiment Station* (1959).

Harvey Nixon Rexroad, B.S.E.E., M.S., Ph.D., *Associate Professor of Physics* (1957), 1947.

Randall William Reyer, A.B., M.A., Ph.D., *Associate Professor of Microanatomy and Organology* (1957).

John Marvin Reynolds, B.S., D.D.S., *Assistant Professor of Crown and Bridge Dentistry* (1959), (Resigned July 31, 1961).

Michael Morgan Reynolds, A.B., M.S., M.A., *Assistant Director of Libraries* (1957).

George Wesley Rice, B.A., M.A., *Assistant Professor of Political Science* (1960).

Jane B. Riddle, *Assistant to Director of Personnel* (1961).

John Harrison Rietz, D.V.M., M.Sc., *Professor Emeritus of Veterinary Science and Animal Pathologist Emeritus* (1948), 1927.

Lewis Broadbent Ringer, B.S., *Instructor in Physical Education; Swimming Coach* (1958). (Resigned August 31, 1961).

Robert Allen Robards, B.S.B.A., *Assistant to Director of Business Affairs* (1960).

Carl Leo Roberts, *Equipment Custodian, Athletics* (1947).

Elizabeth Ann Roberts,* B.S.H.E., M.S., *Extension Specialist in Foods and Nutrition, Cooperative Extension Service* (1956), 1953.

Evan Owen Roberts, A.B., M.A., Ph.D., *Professor of Economics and Marketing* (1953), 1939.

Louise Boggess Roberts, B.S., M.A., *Instructor in Education* (Retired); *Teacher* (Retired) University High School (1960), 1928.

William E. Roberts, Col., B.S., *Professor of Military Science* (1959).

J. Ben Robinson, D.Sc., D.D.S., *Dean Emeritus, School of Dentistry* (1958), 1953.

Robert Leo Robinson, A.B., M.A., Ph.D., *Assistant Professor of Pharmacology* (1961), 1959.

Ruth Eleanor Robinson, A.B., M.A., *Manager, University Book Store* (1944), 1939.

Walter Harrison Rockenstein, A.B., S.T.B., S.T.M., *Instructor in Speech* (1956).

Ira Errett Rodgers, A.B., *Associate Professor of Physical Education and Golf Coach* (1950), 1920.

Earl G. Rogers, B.A., *Superintendent of Custodial Services, Physical Plant* (1960).

Kate Meredith Roller, A.B., M.A., *Instructor in Education* (Retired); *Teacher* (Retired) *University High School* (1955), 1927.

Raymond Sydney Rollings, Lt.Col., B.C.E., M.C.E., *Director of Education in Air Science* (1959).

Stanley Edward Romanoski, B.S., M.S., *Instructor in Physical Education; Head Coach, Cross-Country and Track* (1957).

Lois Elizabeth Rosier, R.N., *Head Nurse, Operating Room, University Hospital* (1960).

Billy J. Ross, *Research Analyst, Bureau for Government Research* (1961).

William Robert Ross, M.A., *Assistant Professor of Political Science* (1948), 1939.

Kathleen Guerrieri Rousseau, B.M., M.A., *Instructor in English* (1960).

Eugene E. Ruley, Geol.E., M.S.Geol.E., *Petroleum Research Engineer, Engineering Experiment Station* (1960).

Charles Michael Runner, *Stationary Engineer* (Retired), *Mechanical Engineering* (1950), 1919.

Harter Miller Rupert, Jr., B.S.C.E., *Instructor in Civil Engineering* (1957). (Resigned June 1, 1961).

Everett Roy Russell, S/Sgt., *Instructor in Military Science* (1959).

Byron Edward Ruth, B.S.C.E., M.S.C.E., *Instructor in Civil Engineering* (1961).

Richard Neil Ryan, B.S., M.A., *Instructor in Education; Teacher, University High School* (1959).

Aaron Sacks, A.B., M.S., *Lecturer* (part-time) *in Social Group Work* (1956).

Sabri Sami, B.Sc., M.S., Ph.D., *Professor of Structural Engineering; Director of Graduate Studies and Research in Civil Engineering* (1958). (Deceased September 7, 1961).

Mabel Kersey Samuel, B.S., *Dietitian and Executive Housekeeper, Men's Hall* (1946).
Ernest James Sandy, B.S., *Assistant Professor of Mining Engineering* (1957), 1946.
Thelma Carlow Sandy, B.S.N.Ed., M.Litt., *Assistant Professor* (part-time) *of Nursing Education* (1960), 1959. (Resigned January 31, 1961).
John Patrick Santry, Maj., B.S., *Associate Professor of Military Science* (1959).
Viken Sassouni, Dent.Surg., M.Sc., D.Sc., D.D.S., *Professor and Chairman of Orthodontics* (1960).
Robert Earl Sausen, D.D.S., M.S.D., *Professor and Chairman of Operative Dentistry* (1958).
Greek Sayre, A.B., M.A., *Assistant Professor Emeritus of English* (1957), 1918.
LeRoy Hallowell Saxe, Jr., B.S., M.A., Ph.D., *Associate Professor of Pharmacology and Pharmacy* (1958), 1955.
George Etheridge Schafer, B.M., M.M., Ph.D., *Associate Professor of Music and Chairman of Graduate Studies* (1960), 1954.
James Hamilton Schaub, B.S.C.E., M.S.C.E., Ph.D., *Professor and Chairman of Civil Engineering* (1960).
Bernhard Schfr, B.S., M.A., M.S.S.W., D.S.W., *Associate in Rehabilitation Social Work* (1960).
John Gustave Scherlacher, B.S., M.Ed., *Professor and Chairman of Recreation and State Recreation Consultant* (1960), 1947.
Bernard Burton Schlanger, B.A., M.A., Ph.D., *Professor of Speech; Director of Speech and Hearing Clinic* (1959), 1958.
Oscar Edmund Schubert, B.S.Agr., M.S., Ph.D., *Professor of Horticulture; Horticulturist, Agricultural Experiment Station* (1961), 1949.
Walter Donald Schultze, B.A., M.S., Ph.D., *Assistant Professor of Bacteriology; Assistant Bacteriologist, Agricultural Experiment Station* (1959), 1958. (Resigned March 31, 1961).
Henry Charles Schwartz, A.B., A.M., Ph.D., *Professor of Romance Languages, Parkersburg Branch, W.V.U.* (1961).
Albert John Schwing, Jr., SFC, *Chief Clerk in Military Science* (1960).
Jane C. Scott, B.M., A.B., M.Mus., *Assistant Professor of Music Education* (1958).
Margaret Ann Scott, B.S., M.A., *Instructor in English* (1961).
Raymer Egbert Seaman, *Instructor Emeritus in Foundry Practice and Woodworking* (1945), 1912.
Ralph William Seeger, A.B., *Engineer-Geologist, Engineering Experiment Station* (1957).
Charles Borum Seibert, B.S.E.E., M.S.E.E., *Professor of Electrical Engineering* (1951), 1934. (Deceased June 12, 1961).
John Edward Seknicka, B.S.C.E., *Instructor* (part-time) *in Civil Engineering* (1961).
Leon Zee Seltzer, Ph.D., B.S.E., *Professor and Chairman of Aero-Space Engineering; Aero-Space Engineer, Engineering Experiment Station* (1949).
John Semon, A.B., M.S., *Associate Professor of Physical Education; Chairman of Physical Education for Men* (1955), 1943.
Santino Thomas Serpento, B.S., M.A., *Assistant Director of Personnel* (1960).
Ronald G. Severs, A.B., B.S., M.D., *Resident in Surgery* (1961).
James N. Shafer, A.B., M.A., Ph.D., *Associate Professor of Psychology* (1959), 1953.
Raymond Edwin Shafer, B.S.I.E., M.S.I.E., *Professor and Chairman of Industrial Engineering* (1957), 1949.
Hubert Adams Shaffer, B.S., M.D., *Consulting Radiologist, University Health Service; Clinical Associate Professor of Radiology; Clinical Assistant Professor of Anatomy* (1961), 1949.
Kenneth W. Shaffer, B.A., M.A., *Adviser, Off-Campus Housing, Student Affairs* (1961).
Harold Joseph Shamberger, A.B., M.P.A., *Assistant to the President* (1960), 1949.
Stanley R. Shane, B.A., M.D., *Resident in Medicine* (1961).
George Sharpe,* B.S.Agr., M.S., *Extension Soil Conservationist, Cooperative Extension Service* (1944), 1929.
Charles Jack Sheehan, B.S., *Veterans Coordinator and Coordinator of Scholarships* (1957), 1955.
Stephanie Shehatovich, *Master Teacher in Piano, University Extension* (1960).
Damon Charles Shelton, B.S.A., M.S., Ph.D., *Associate Professor of Biochemistry* (1960), 1953.

Vernon Morris Sheppard, Jr.,* B.S., M.S., *Extension Economist, Cooperative Extension Service* (1958).

David Connell Sherren, B.S.M.E., *Instructor in Mechanical Engineering* (1961).

Charles William Shetler, B.A., M.A., *Curator, West Virginia Collection, Library* (1950).

Soh Chao Shih, B.S., M.S., Ph.D., *Research Associate, Agronomy and Genetics* (1961).

John Edward Shockey, B.S., *Instructor in Physical Education; Freshman Football Coach* (1960), 1950.

Wilson Porter Shortridge, A.B., A.M., Ph.D., *Professor Emeritus of History* (1951), 1922.

Mary Ethel Shoup, B.S., M.S., *Instructor in Medical-Surgical Nursing* (1961).

Robert Wesley Shreeves, B.S., M.S., Ph.D., *Associate Professor of Theoretical and Applied Mechanics* (1961).

James Robert Shumaker, B.S., M.S., *Instructor in Horticulture; Assistant in Horticulture, Agricultural Experiment Station* (1958).

Fred B. Silberstein, B.A., M.A., Ph.D., *Assistant Professor of Sociology* (1958), 1955.

Carroll Orr Simmons, *Assistant Housekeeper, University Hospital* (1961).

Charles Scott Simmons, *Business Manager, Athletics* (1955), 1947.

Howard Perry Simons, B.A., M.Sc., Ph.D., *Professor and Chairman of Chemical Engineering; Chemical Engineer, Engineering Experiment Station* (1959), 1939.

Armand Edwards Singer, A.B., A.M., Ph.D., *Professor of Romance Languages* (1955), 1940.

Leonard Marion Sizer, Th.B., B.A., B.D., M.A., Ph.D., *Associate Professor of Rural Sociology; Associate Rural Sociologist, Agricultural Experiment Station* (1959), 1955.

Charles Preston Skaggs, B.S., C.P.A., *Lecturer in Accounting* (1954).

Elizabeth Summers Skaggs, R.N., B.S., *Nursing Supervisor, Out-Patient Department, University Hospital* (1960).

John Madison Slack, B.A., M.S., Ph.D., *Professor and Chairman of Microbiology* (1949), 1946.

Clark Kendall Sleeth, A.B., B.S., M.D., *Dean and Professor, School of Medicine* (1961), 1935.

Robert Dean Slonneger, B.S.M.E., M.S.M.E., *Associate Professor of Mechanical Engineering; Associate Mechanical Engineer, Engineering Experiment Station* (1955), 1954.

Clement Art Smith, A.B., M.D., *Associate Clinical Professor of Radiology* (1961), 1960.

Fred Manning Smith, A.B., B.A., M.A., Ph.D., *Professor Emeritus of English* (1951), 1922.

Howard Carrollton Smith, B.S.A., *Superintendent, Poultry Science Farm* (1921).

Marion Judson Smith, B.S.E.E., M.S.E.E., *Professor of Electrical Engineering* (1956), 1954.

Nelson Stuart Smith, Jr., B.S.E.E., M.S.E.E., *Assistant Professor of Electrical Engineering* (1958), 1956.

Paul Morrow Smith, B.S., *Superintendent of Dairy Processing; Instructor in Dairy Science* (1959).

Robert Leo Smith, B.S., M.S., Ph.D., *Assistant Professor of Wildlife Management; Assistant Forester, Agricultural Experiment Station* (1958).

Sara Rector Smith, A.B., M.A., Ph.D., *Associate Professor of History, Parkersburg Branch W.V.U.* (1961), 1946.

Charles R. Smoot, B.S., Ph.D., *Assistant Professor of Chemistry, Parkersburg Branch, W.V.U.* (1961).

Grace Martin Snee, B.M., *Instructor Emeritus in Piano and Pipe Organ* (1945), 1898.

Robert Bruce Snider, M/Sgt., *Administrative Supervisor, Military Science* (1959).

Donald Lane Snodgrass, Elec.Techn., *Nuclear Engineering Technician in Chemical Engineering* (1960).

Robert Douglas Snyder, B.S.M.E., M.S.M.E., *Instructor in Theoretical and Applied Mechanics* (1961).

Coy LaRue Son, S/Sgt., *Personnel Technician in Air Science* (1957). (Resigned November 7, 1961).

Ruth J. Sorge, B.S., M.Ed., *Supervisor, Operating Rooms, University Hospital* (1960).

Robert Clifton Spangler, A.B., M.A., Ph.D., *Professor Emeritus of Botany* (1955), 1914.

Claude Carl Spiker, Ph.D., *Professor Emeritus of Psychology* (1953), 1925.

ELIZABETH CARROLL SPINDLER, A.B., M.A., *Instructor in English* (1961), 1944.
JOSEPHINE BROWN SPINDLER, *Social Director, Terrace Hall* (1960).
ROBB SPAULDING SPRAY, PH.D., *Professor Emeritus of Bacteriology and Public Hygiene* (1946), 1921.
WILLIAM SQUIRE, B.S., M.A., *Professor of Aero-Space Engineering* (1961).
ELVIS JACOB STAHR, JR., A.B., B.A. IN JURISPRUDENCE, B.C.L., M.A., LL.D., *President of the University* (1959). (Resigned June 5, 1961).
RAYMOND DOUGLAS STALLARD, A.B., M.A., *Instructor in Speech; Director of Intercollegiate Forensics* (1961).
ELIZABETH MATTINGLY STALNAKER, A.B., A.M., PH.D., *Professor Emeritus of Psychology* (1953), 1925.
EUGENE LEO STAPLES, B.S., M.H.A., *Director of University Hospital* (1960).
JOHN F. STASNY, A.B., M.A., *Instructor in English* (1955).
EDWARD M. STEEL, JR., A.B., M.A., PH.D., *Associate Professor of History* (1956).
PAULINE FAE STEELE, B.S., CERT.G.D.H., B.SC.EDUC., M.A., *Assistant Professor and Director of Dental Hygiene* (1961).
FORREST WILBUR STEMPLE, A.B., M.SC., PH.D., *Professor Emeritus of Education* (1952), 1916.
JACQUELINE SUE STEMPLE, B.S., *In-Service Education Supervisor, Nursing Service* (1960).
RUTH MAGDALENE STEMPLE, B.S., M.S., *Head, Agriculture and Engineering Library* (1960), 1955.
HELEN MARIE STEVENS, B.S., *OB-Pediatrics Nursing Supervisor* (1960).
GUY HARRY STEWART, B.S.J., M.A., PH.D., *Associate Professor of Journalism* (1960), 1949
GWENDOLYN JONES STEWART, B.S., M.S., *Bacteriologist in Microbiology, Medical Center* (1960), 1953.
IRVIN STEWART, LL.B., B.A., M.A., PH.D., LL.D., LITT.D., *Professor of Political Science* (1958), 1946.
JOSEPH K. STEWART, PH.D., *Professor and Chairman of Mathematics* (1960), 1930.
ORVAL CHRISTY STEWART, B.S.M.E., *Instructor in Mechanical Engineering* (1956). (Resigned June 1, 1961).
GLENN EDWARD STEYERS, B.S., M.S., *Associate Professor of Horticulture; University Landscape Architect* (1960).
JOHN CLIFFORD STICKNEY, B.S., M.S., PH.D., *Professor of Physiology* (1957), 1940.
ROBERT STILWELL, B.A., M.A., PH.D., *Professor of German* (1955), 1947.
OSCAR C. STINE, PH.B., PH.D., *Consultant in Agricultural Economics, Agricultural Experiment Station* (1961).
ANTHONY H. STOCKS, A.A., B.A., M.A., *Assistant Professor of Economics* (1961).
LOWRY MCELVAINE STOOPS, A.B., *Assistant Director of Athletics* (1926).
BENJAMIN M. STOUT, A.B., M.D., *Physician, University Health Service; Clinical Instructor* (part-time) *in Medicine* (1960), 1957.
JOHN MILTON STRAIT, M.E.E.E., M.E.PROF., *Associate Professor of Mechanical Engineering* (Retired), (1955). (Retired June 1, 1961).
RICHARD EUGENE STRANGE, B.M.E., M.M.E., *Assistant Professor of Music; Director of Bands, School of Music* (1960). (Resigned July 21, 1961).
PERRY DANIEL STRAUSBAUGH, PH.D., *Professor Emeritus of Botany* (1948), 1923.
ROBERT COWAN STRONG, JR., B.S., M.S., B.ED., *Instructor in Mathematics* (1957).
EDWARD G. STUART, B.S., M.A., PH.D., M.D., *Associate Professor of Pathology; Assistant Dean, School of Medicine* (1960).
ALBERT LEE STURM, A.B., A.M., PH.D., *Professor of Political Science* (1951), 1946.
HENRY LEE SUBLETT, JR., A.B., M.ED., ED.D., *Assistant Professor of Education* (1961).
ELEANOR BRADY SUHRIE, B.S., M.LITT., *Assistant Professor of Medical-Surgical Nursing* (1961).
MARY ELIZABETH SULLIVAN, *Room Assignment and Scheduling Officer, Registrar's Office* (1960), 1924.
FESTUS PAUL SUMMERS, A.B., A.M., PH.D., *Professor and Chairman of History* (1947), 1932.
WILLIAM ROBERT SUMMERS, JR., B.S.J., M.A., *Associate Professor of Journalism* (1960), 1952.
HIROSHI SUZUKI, M.D., *Teaching Fellow in Pathology* (1961).
JOHN BRADFORD SWECKER, B.S., M.S., *Assistant Professor of Agricultural Education* (1956). (Leave of Absence September 1, 1961).

Robert Frederick Sweitzer, B.S.Agr., *Superintendent of University Horticulture Farm* (1960).

Joseph Paul Talerico, A.B., M.A., *Instructor in Education; Teacher, University High School* (1950), 1948.

Thomas Joseph Tarnay, A.B., M.D., *Surgical Fellow, Third-Year Surgical Resident* (1961), 1960.

Thomas Joseph Tatterson,* B.S., *Assistant Extension Horticulturist, Cooperative Extension Service* (1957). (Resigned January 1, 1961).

Carl B. Taylor,* A.B., M.A., *Assistant Professor of Family Life; Assistant Family Life Specialist, Cooperative Extension Service* (1961).

Harley Ustus Taylor, Jr., B.A., M.A., *Instructor in German; Assistant in Humanities* (1951), 1949.

Jack Dean Taylor, B.S., M.A., *Instructor in Education* (1958), 1957.

Leland Hart Taylor, B.S., M.S., Sc.D., *Professor of Zoology* (1939), 1922.

Mary Coddington Templeton, A.B., M.S., *Assistant in Agricultural Economics, Agricultural Experiment Station* (1955).

Roger D. Teter, B.S.M.E., *Instructor in Theoretical and Applied Mechanics* (1959).

W. David Teter, B.S.M.E., *Instructor in Mechanical Engineering* (1961).

Willard Dale Thacker, B.S., *Chief Pharmacist, University Hospital* (1960).

Kinney Joseph Thens, B.S., *Instructor in Home Economics; Manager, University Cafeteria* (1959). (Resigned November 30, 1961).

Ralph Hough Theophilus, B.S.E.E., Litt.M., M.Ed., *Associate Professor of Electrical Engineering* (1956).

Arthur Raymond Thomas, A.B., Sc.M., Ph.D., *Assistant Professor of Psychology* (1957), 1956.

Barbara S. Thomas, B.S., M.A., *Instructor in Speech* (1961).

Charles Danser Thomas, A.B., M.S., Ph.D., *Professor and Chairman of Physics* (1956), 1931.

Garold Ralph Thomas, B.S.C.E., *Instructor* (part-time) *in Civil Engineering* (1961).

Kenneth E. Thomas, B.A., M.D., *Surgical Resident* (1961).

Robert Hamilton Thomas, B.S.Agr., M.A., Ph.D., *Associate Professor of Dairy Science; Associate Dairy Scientist, Agricultural Experiment Station* (1958).

C. T. Thompson, A.B., B.S., M.D., *Clinical Assistant Professor of Obstetrics* (1960).

James Howard Thompson, A.B., M.A., Ph.D., *Professor of Economics; Director, Bureau of Business Research* (1958), 1948.

Patrick John Thompson, *Business Office Supervisor, University Hospital* (1961).

Gordon Rudolph Thorn, A.B., M.A., *Assistant Director of Student Affairs; Head Resident, Hen's Hall* (1957).

June Metz Thorn,* B.S., M.S., *Assistant State Club Leader, Cooperative Extension Service* (1958), 1945.

George E. Toben, M.S., *Professor of Agricultural Economics; Agricultural Economist in Farm Management, Agricultural Experiment Station* (1960), 1946.

Robert John Tolbert, B.S., B.A., Ph.D., *Assistant Professor of Biology* (1959).

Patrick Anthony Tork, A.B., M.S., *Assistant to the Dean, School of Physical and Health Education, Recreation, and Safety; Professor of Physical Education* (1960), 1943.

Celia Jeanette Tower, A.B., M.A., *Instructor in English* (1957).

Edwin C. Townsend, B.S., *Programmer, Data Processing Center* (1960).

Richard W. Townsley, Capt., B.S., *Assistant Professor of Military Science* (1961).

Martha Rector Traxler, *Chief Clerk, Business Relations and Records, College of Agriculture, Forestry, and Home Economics* (1950), 1927.

Charles Edward Triona, M/Sgt., *Assistant Supply Sergeant in Military Science* (1959).

Robert Russell Trotter, B.A., B.S.Med., M.D., *Associate Clinical Professor of Surgery; Chairman, Division of Ophthalmology* (1961).

Rodney Philip True, A.B., Ph.D., *Professor of Plant Pathology; Plant Pathologist, Agricultural Experiment Station* (1955), 1949.

Earl Haven Tryon, B.S., M.S., Ph.D., *Professor of Silviculture; Silviculturist, Agricultural Experiment Station* (1952), 1945.

Charles Edward Tupes, B.S.I.E., *Analyst, Physical Plant* (1961).

Bird Margaret Turner, Ph.D., *Professor Emeritus of Mathematics* (1947), 1923.

Bradford Tye, B.S., M.S., *Instructor in Mathematics, University Extension* (1959).

Benjamin Harrison Ulrich, Jr., B.S.A.E., M.S.A.E., *Associate Professor of Aero-Space Engineering; Associate Aero-Space Engineer, Engineering Experiment Station* (1955), 1951.

Valentin Ulrich, A.B., Ph.D., *Assistant Professor of Genetics; Assistant Geneticist, Agricultural Experiment Station* (1957).

Eugene Riley Vale, Sgt.Maj., *Sergeant Major in Air Science* (1956). (Resigned May 31, 1961).

C. Gregory Van Camp, A.B., *Director of Educational Broadcasting* (1960).

Willem Adolph van Eck, B.S.Trop.For., M.S., Ph.D., *Assistant Professor of Agronomy; Assistant Agronomist, Agricultural Experiment Station* (1957).

Audrey Howard VanLandingham, B.S., M.S., Ph.D., *Director of the Agricultural Experiment Station; Associate Dean, College of Agriculture, Forestry, and Home Economics* (1959), 1929.

Edward Jerald Van Liere, M.S., M.D., Ph.D., Litt.D., *Dean Emeritus, School of Medicine; Research Professor of Obstetrics* (1961), 1921.

Betty Jane Veach, B.S.N.Ed., *Administrative Supervisor, Nursing Service* (1961).

Collins Veatch, B.S., M.S., Ph.D., *Professor of Agronomy; Agronomist, Agricultural Experiment Station* (1959), 1945.

Charles Henry Vehse, Sc.B., M.S., Ph.D., *Professor of Mathematics* (1947), 1929.

William Everett Vehse, B.A., M.S., *Assistant Professor of Physics* (1961).

Marvin Lewis Vest, B.S., M.S., A.M., Ph.D., *Professor of Mathematics* (1955), 1931.

Michael Anthony Viggiano, A.B., B.S., M.D., M.P.H., *Lecturer in Microbiology and Pharmacy* (1947).

Vern Hargrave Vincent, B.B.A., M.B.A., Ph.D., *Professor of Accounting* (1957).

Mayme Elizabeth Waddell, B.S., M.A., *Director, Residence Hall* (Retired), (1956), 1930.

Rebecca Estra Wade, A.B., M.A., *Assistant Professor of Romance Languages* (1955), 1945.

Charles Richard Wagner, A.B.Arch., *University Architect* (1961).

William V. Wagner, B.S., M.A., Ed.D., *Assistant Professor of Education* (1960), 1959.

Walter Hamilton Walker, A.B., B.S., M.A., Ph.D., *Director, Kanawha Valley Graduate Center of W.V.U.; Lecturer in Chemistry* (1960).

Roy Emil Wall, *Associate Illustrator in Photography and Illustration, Medical Center* (1959).

Thomas Joseph Wall, B.S., M.Litt., *Director of Personnel* (1960).

Emily G. Wallace, R.N., *General Duty Nurse, University Infirmary* (1959).

Charles Ernest Walls, *Laboratory Assistant and Mechanician in Chemical Engineering* (1947), 1938.

Richard Edison Walters, B.S.A.E., *Instructor in Aero-Space Engineering* (1960), 1959.

James Henry Walthall, B.S., *Instructor in Physical Education; Assistant Football Coach* (1960).

Benjamin W. Wamsley,* A.B., B.S., *Extension Associate Animal Husbandman, Cooperative Extension Service* (1957), 1948.

Herbert E. Warden, B.S., M.D., Ph.D., *Associate Professor of Surgery* (1960).

Juanita Ruth Ware, R.N., *Night Head Nurse, University Hospital* (1960).

Richard M. Ware, A.B., M.A., *Instructor in Physical Education; Football End Coach* (1961).

Charles Henry Warner, B.S.M.E., M.S.M.E., *Assistant Professor of Mechanical Engineering* (1960), 1955

H. Lynn Warner, A.B., M.A., *Mechanist, Agricultural Sciences Building* (1961).

Mary Melissa Washburn,* *Assistant to Director, Cooperative Extension Service* (1957), 1934.

James Allen Wasson, B.S., M.S., *Assistant Professor of Mining Engineering* (1960).

Sharon Soutar Watring, B.S., *Nursing Supervisor in Medicine* (1960).

Leighton Guilford Watson,* A.B., *Head, Communications and Visual Aids, College of Agriculture, Forestry, and Home Economics; Extension Editor, Cooperative Extension Service* (1961), 1938.

Ray Howard Watson, B.A., M.S., *Instructor in Physical Education; Assistant Football Coach* (1960).

Daniel Thomas Watts, A.B., Ph.D., *Professor and Chairman of Pharmacology* (1953).

Royce Jackson Watts, B.S. M.S., *Supervisor, Office of Business Relations and Records, College of Agriculture, Forestry, and Home Economics; Assistant Professor of Statistics* (1961), 1955.

Charles Edward Weakley, A.B., M.A., *Associate Agricultural Biochemist Emeritus, Agricultural Experiment Station* (1955), 1907.
George William Weaver, B.S.M.E., M.S.M.E., *Assistant to Dean, College of Engineering; Associate Professor of Theoretical and Applied Mechanics* (1956), 1948.
Paul Robert Webb, B.S., M.A., *Teacher, University High School* (1959). (Resigned June 1, 1961).
Samuel Josephus Weese, B.S., M.A., *Associate Professor of Dairy Science; Associate Dairy Sicentist, Agricultural Experiment Station* (1951), 1945.
James Alexander Welch, B.S.Agr., Ph.D., *Professor of Animal Science; Animal Husbandman, Agricultural Experiment Station* (1960), 1952.
John Thomas Welch, A.B., D.D.S., *Assistant Professor of Oral Surgery* (1959).
Lloyd Washington Welden, B.S., A.M., *Professor of Speech; Executive Secretary, W. Va. Interscholastic Forensic League; Director of Public Address Area* (1952), 1948.
Neil J. Weller, Ph.D., *Assistant Professor of Sociology* (1958).
Dana Wells, A.B., M.A., Ph.D., *Professor and Chairman of Geology* (1961), 1930.
Verna Lillian Wells, Ph.C., *Assistant to Dean, College of Arts and Sciences* (1961), 1936.
William Arch Welton, A.B., M.D., *Instructor in Medicine and Chairman of Dermatology* (1961).
Ching-yung Wen, B.S., M.S.Ch.E., Ph.D., *Associate Professor of Chemical Engineering* (1959), 1954. (Leave of Absence—September 1, 1961-August 31, 1962).
Blaine Stemple West, B.S.C.E., *Instructor in Theoretical and Applied Mechanics* (1960).
Kyle Chester Westover, B.S., M.S., Ph.D., *Professor of Horticulture; Horticulturist, Agricultural Experiment Station* (1945), 1921.
Joseph Bernard Weyrick, M/Sgt., *Instructor in Military Science* (1959). (Resigned September 7, 1961).
Harry Grove Wheat, A.B., A.M., Ph.D., *Professor Emeritus of Education* (1956), 1935.
Bennett Sexton White, B.S.M.E., *Professor Emeritus of Drawing and Machine Design* (1946), 1919. (Deceased March 17, 1962).
John Lynn White, B.S.M.E., *Instructor in Theoretical and Applied Mechanics* (1960).
Ralph Milton White, A.B., LL.B., M.A., *Assistant Professor of Political Science* (1957), 1942.
Shirley Marie Kidd White, A.B., *Junior Catalogue Librarian* (1959), 1956. (Resigned June 30, 1961).
Waldo D. Whitney, A.B., M.S.S.W., *Associate Professor of Social Work; Co-Administrator, University Counseling Center* (1957), 1951.
Frederick Rendell Whittlesey, B.A., M.D., *Assistant Professor* (part-time) *of Medicine* (1940), 1930.
Mary Kathryne Wiedebusch, B.S., *Instructor in Women's Physical Education* (1955).
Ella B. Wiese, *Executive Housekeeper, University Hospital* (1960).
Dale L. Wilhelm, B.S., M.S., Ph.D., *Associate Professor of Chemistry* (1959), 1954.
John Rodney Williams, B.A., M.A., Ph.D., *Professor and Chairman of Political Science* (1961), 1949.
Leah Ann Williams, A.B., M.S., *Instructor in Biology* (1959).
T. Walley Williams, B.S., M.S., Ph.D., *Professor and Chairman of Microanatomy and Organology* (1957), 1944.
Douglas Bleecker Williamson, B.A., M.A., Ed.D., *Associate Professor of Physics* (1946).
Kent Lee Williamson, *Technician in Pharmacy* (1961).
Charles Vinyard Wilson, B.S.Agr., M.S., *Professor Emeritus of Animal Science and Animal Husbandman Emeritus* (1952), 1919.
Donald Edward Wilson, Capt., B.A., M.A., *Assistant Professor and Administrative Officer of Air Science* (1958).
Harold Albert Wilson, B.S., M.S., Ph.D., *Professor of Bacteriology; Bacteriologist, Agricultural Experiment Station* (1957), 1947.
John Frederick Wilson, A.B., D.D.S., *Instructor in Operative Dentistry* (1959), 1958.
Margaret Ann Wilson, B.S., M.Sc., Ph.D., *Director, University Hospital Dietetics Department* (1960).
Quintus Charles Wilson, B.S., M.A., Ph.D., *Dean and Professor of Journalism* (1961).
Roderick Wayne Wilson, A.B., M.S., *Instructor in Physics* (1960).
May Landstreet Wilt, B.S., M.A., *Instructor in Education; Teacher, University High School* (1931), 1925.

Audrey Edith Windemuth, B.S., M.N.A., *Director of Nursing Service, University Hospital* (1960).
Anthony Winston, B.S., M.S., Ph.D., *Assistant Professor of Chemistry* (1959).
Louise Farrell Winterbottom, *Law Librarian* (Retired), *College of Law* (1959), 1924.
John Dudley Withers, A.B., M.S., *Instructor in Biology* (1961).
Albert F. Wojcik, B.S., M.S., *Assistant Professor of Pharmacy* (1949), 1945.
Joseph Francis Wolfe, *Flight Instructor in Aero-Space Engineering* (1958).
Darrell Elroy Wood, B.M., M.M., *Instructor in Education; Teacher, University High School* (1959).
John Kenneth Wood, B.M., M.M., *Associate Professor of Music* (1941), 1928.
Yvonne Mildred Woofter, A.B., M.A., *Instructor in Education; Teacher, University High School* (1941), 1936.
Donald Thompson Worrell, B.S.E.E., M.S.E.E., *Professor of Theoretical and Applied Mechanics; Engineer, Engineering Experiment Station* (1955), 1941.
Fred Earl Wright, II, B.S., M.A., *Assistant Professor of Finance* (1955), 1951.
Donald Harold Wykoff, B.S., *Guidance Assistant in Education* (1960), (Resigned May 31, 1961).
Margaret Ann Yarbrough, R.N., *Nurse, University Health Service, Medical Center* (1961), 1953.
Allen E. Yeakel, M.D., *Assistant Professor of Anesthesiology* (1961).
Elisabeth Stelle Yearick, B.S., M.S., Ph.D., *Associate Professor of Nutrition; Associate Nutritionist, Agricultural Experiment Station* (1960).
Charles Peter Yost, B.S., M.S., Ph.D., *Associate Professor of Physical Education; Chairman of Safety Education* (1958), 1946.
Harold G. Young, B.S., M.D., *Associate Professor of Surgery* (1961).
James Robert Young, B.A., M.A., *Assistant Professor of Journalism* (1954).
John Stanley Zawacki, B.S., M.S., *Instructor in Sociology* (1961).
Donald Carl Zeiger, B.S.Agr., M.S., Ph.D., *Assistant Horticulturist, Agricultural Experiment Station* (Kearneysville) (1958). (Resigned June 1, 1961).
Bernard Zimmermann, M.D., Ph.D., *Professor and Chairman of Surgery* (1960).

THE CLASSIFIED ENROLLMENT

A. The Summer Session, 1961

Colleges and Schools	Senior			Junior			Sophomore			Freshman			Total			Special			Grand Total		
	Men	Women	Total	Men	Women	Total	Men	Women	Total	Men	Women	Total	Men	Women	Total	Men	Women	Total	Men	Women	Total
Agr., For., & Home Econ	37	26	63	61	14	75	39	6	45	6	3	9	143	49	192				143	49	192
Arts and Sciences	102	44	146	106	55	161	120	91	211	73	49	122	401	239	640	52	29	81	453	268	721
Commerce	70	5	75	34	2	36							104	7	111	2		2	106	7	113
Education	35	54	89	7	25	32							42	79	121	6	5	11	48	84	132
Engineering	63		63	73		73	62	2	64	27		27	225	2	227	1		1	226	2	228
Graduate													840	461	1,301	158	164	322	998	625	1,623
Journalism	3	3	6	2	2	4							5	5	10				5	5	10
Mines	10		10	8		8	4		4	2		2	24		24				24		24
Music	6	3	9	3	7	10	5	6	11		1	1	14	17	31				14	17	31
Nursing								7	7					7	7		3	3		10	10
Physical and Health Education, Recreation and Safety	44	12	56	16	9	25	17	5	22	14	1	15	91	27	118				91	27	118
Kanawha Valley Center																					
Parkersburg Branch																					
TOTAL	370	147	517	310	114	424	247	117	364	122	54	176	1,889	893	2,782	219	201	420	2,108	1,094	3,202

	4th Year			3rd Year			2nd Year			1st Year			Total			Special			Grand Total		
	Men	Women	Total	Men	Women	Total	Men	Women	Total	Men	Women	Total	Men	Women	Total	Men	Women	Total	Men	Women	Total
Dentistry																					
Law																					
Medicine							1	5	6				1	5	6				1	5	6
Pharmacy	8	3	11	9	5	14	1		1				18	8	26				18	8	26
TOTAL	8	3	11	9	5	14	2	5	7				19	13	32				19	13	32
GRAND TOTAL	378	150	528	319	119	438	249	122	371	122	54	176	1,908	906	2,814	219	201	420	2,127	1,107	3,234

B. The First Semester (September to January), 1961-62

Colleges and Schools	Senior			Junior			Sophomore			Freshman			Total			Special			Grand Total		
	Men	Women	Total	Men	Women	Total	Men	Women	Total	Men	Women	Total	Men	Women	Total	Men	Women	Total	Men	Women	Total
Agr., For., & Home Econ	140	44	184	125	48	173	129	48	177	117	35	152	511	175	686		2	2	511	177	688
Arts and Sciences	205	88	293	302	154	456	534	351	885	610	501	1,111	1,651	1,094	2,745	43	48	91	1,694	1,142	2,836
Commerce	140	12	152	104	8	112							244	20	264	2		2	246	20	266
Education	52	89	141	25	95	120							77	184	261		1	1	77	185	262
Engineering	214	1	215	245	2	247	317	1	318	361	1	362	1,137	5	1,142	3		3	1,140	5	1,145
Graduate													593	212	805	85	57	142	678	269	947
Journalism	15	9	24	11	6	17							26	15	41	1	1	2	27	16	43
Mines	13		13	9		9	19		19	14		14	55		55				55		55
Music	10	8	18	14	20	34	23	13	36	17	24	41	64	65	129	1		1	65	65	130
Nursing								27	27		51	51		78	78		15	15		93	93
Physical and Health Education, Recreation and Safety	71	16	87	77	22	99	75	31	106	58	36	94	281	105	386	3	1	4	284	106	390
Kanawha Valley Center													76		76	5		5	81		81
Parkersburg Branch										66	29	95	66	29	95	3	4	7	69	33	102
TOTAL	860	267	1,127	912	355	1,267	1,097	471	1,568	1,243	677	1,920	4,781	1,982	6,763	146	129	275	4,927	2,111	7,038

	4th Year			3rd Year			2nd Year			1st Year			Total			Special			Grand Total		
Dentistry	26		26	21	1	22	17		17	40	2	42	104	3	107				104	3	107
Law				42	1	43	48		48	65	2	67	155	3	158	2		2	157	3	160
Medicine	16	1	17	44	11	55	38	7	45	52	9	61	150	28	178				150	28	178
Pharmacy	26	5	31	22	5	27				3	1	4	51	11	62				51	11	62
TOTAL	68	6	74	129	18	147	103	7	110	160	14	174	460	45	505	2		2	462	45	507
GRAND TOTAL	928	273	1,201	1,041	373	1,414	1,200	478	1,678	1,403	691	2,094	5,241	2,027	7,268	148	129	277	5,389	2,156	7,545

C. The Second Semester (February to June), 1961-1962

Colleges and Schools	Senior			Junior			Sophomore			Freshman			Total			Special			Grand Total		
	Men	Women	Total	Men	Women	Total	Men	Women	Total	Men	Women	Total	Men	Women	Total	Men	Women	Total	Men	Women	Total
Agr., For., & Home Econ	129	42	171	119	42	161	104	46	150	111	41	152	463	171	634	1	2	3	464	173	637
Arts and Sciences	192	83	275	284	138	422	454	324	778	547	432	979	1,477	977	2,454	17	25	42	1,494	1,002	2,496
Commerce	127	9	136	119	8	127							246	17	263				246	17	263
Education	52	88	140	40	109	149							92	197	289	1	3	4	93	200	293
Engineering	178	1	179	228	3	231	252	3	255	311	3	314	969	10	979	1		1	970	10	980
Graduate													609	202	811	77	68	145	686	270	956
Journalism	14	8	22	15	8	23							29	16	45		1	1	29	17	46
Mines	9		9	14		14	16		16	13		13	52		52	1		1	53		53
Music	11	13	24	9	19	28	21	13	34	13	21	34	54	66	120	1	2	3	55	68	123
Nursing								26	26		52	52		78	78		12	12		90	90
Physical and Health Education, Recreation and Safety	72	11	83	77	23	100	76	34	110	70	36	106	295	104	399	2	1	3	297	105	402
Kanawha Valley Center													70	1	71	5		5	75	1	76
Parkersburg Branch					1	1	2	1	3	52	31	83	54	33	87	6	3	9	60	36	96
TOTAL	784	255	1,039	905	351	1,256	925	447	1,372	1,117	616	1,733	4,410	1,872	6,282	112	117	229	4,522	1,989	6,511

	4th Year			3rd Year			2nd Year			1st Year			Total			Special			Grand Total		
Dentistry	26		26	21	1	22	16		16	38	2	40	101	3	104				101	3	104
Law				42	1	43	43		43	54	2	56	139	3	142	1		1	140	3	143
Medicine	14	3	17	45	8	53	36	7	43	51	14	65	146	32	178				146	32	178
Pharmacy	26	5	31	23	5	28				3	1	4	52	11	63				52	11	63
TOTAL	66	8	74	131	15	146	95	7	102	146	19	165	438	49	487	1		1	439	49	488
GRAND TOTAL	850	263	1,113	1,036	366	1,402	1,020	454	1,474	1,263	635	1,898	4,848	1,921	6,769	113	117	230	4,961	2,038	6,999

D. The Academic Year (September to June), 1961-62

Colleges and Schools	Senior			Junior			Sophomore			Freshman			Total			Special			Grand Total		
	Men	Women	Total	Men	Women	Total	Men	Women	Total	Men	Women	Total	Men	Women	Total	Men	Women	Total	Men	Women	Total
Agr., For., & Home Econ	150	49	199	130	45	175	129	49	178	127	42	169	536	185	721	1	2	3	537	187	724
Arts and Sciences	219	95	314	318	152	470	535	349	884	616	484	1,100	1,688	1,080	2,768	45	59	104	1,733	1,139	2,872
Commerce	156	13	169	125	8	133							281	21	302	2		2	283	21	304
Education	59	102	161	40	113	153							99	215	314	1	4	5	100	219	319
Engineering	209	1	210	243	3	246	284	3	287	343	2	345	1,079	9	1,088	3		3	1,082	9	1,091
Graduate													733	272	1,005	109	91	200	842	363	1,205
Journalism	14	9	23	15	8	23							29	17	46		1	1	29	18	47
Mines	11		11	15		15	17		17	13		13	56		56	1		1	57		57
Music	11	13	24	12	19	31	26	13	39	16	23	39	65	68	133	1	2	3	66	70	136
Nursing								27	27		54	54		81	81		18	18		99	99
Physical and Health Education, Recreation and Safety	76	17	93	81	24	105	93	36	129	75	39	114	325	116	441	4	2	6	329	118	447
Kanawha Valley Center													98	1	99	6		6	104	1	105
Parkersburg Branch					1	1	2	1	3	75	42	117	77	44	121	9	5	14	86	49	135
TOTAL	905	299	1,204	979	373	1,352	1,086	478	1,564	1,265	686	1,951	5,066	2,109	7,175	182	184	366	5,248	2,293	7,541
	4th Year			3rd Year			2nd Year			1st Year			Total			Special			Grand Total		
Dentistry	27		27	21	1	22	17		17	40	2	42	105	3	108				105	3	108
Law				46	1	47	46		46	62	2	64	154	3	157	2		2	156	3	159
Medicine	14	3	17	46	8	54	37	7	44	51	14	65	148	32	180				148	32	180
Pharmacy	27	5	32	23	5	28				3	1	4	53	11	64				53	11	64
TOTAL	68	8	76	136	15	151	100	7	107	156	19	175	460	49	509	2		2	462	49	511
GRAND TOTAL	973	307	1,280	1,115	388	1,503	1,186	485	1,671	1,421	705	2,126	5,526	2,158	7,684	184	184	368	5,710	2,342	8,052

E. The Summary for 1961-62

Colleges and Schools	Senior			Junior			Sophomore			Freshman			Total			Special			Grand Total		
	Men	Women	Total	Men	Women	Total	Men	Women	Total	Men	Women	Total	Men	Women	Total	Men	Women	Total	Men	Women	Total
Agr., For., & Home Econ	159	55	214	133	45	178	130	49	179	128	43	171	550	192	742	1	2	3	551	194	745
Arts and Sciences	243	105	348	321	161	482	550	360	910	625	490	1,115	1,739	1,116	2,855	91	82	173	1,830	1,198	3,028
Commerce	175	14	189	125	8	133	.....	.....	.....	.....	.....	.....	300	22	322	3	.....	3	303	22	325
Education	73	118	191	40	120	160	.....	.....	.....	.....	.....	.....	113	238	351	3	8	11	116	246	362
Engineering	224	1	225	245	3	248	286	3	289	345	2	347	1,100	9	1,109	3	.....	3	1,103	9	1,112
Graduate	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,302	645	1,947	230	228	458	1,532	873	2,405
Journalism	14	11	25	15	8	23	.....	.....	.....	.....	.....	.....	29	19	48	.....	1	1	29	20	49
Mines	12	.....	12	16	.....	16	18	.....	18	13	.....	13	59	.....	59	1	.....	1	60	.....	60
Music	11	14	25	12	19	31	26	13	39	16	24	40	65	70	135	1	2	3	66	72	138
Nursing	.....	.....	.....	.....	.....	.....	.....	27	27	.....	54	54	.....	81	81	.....	18	18	.....	99	99
Physical and Health Education, Recreation and Safety	88	19	107	81	24	105	95	37	132	76	39	115	340	119	459	4	2	6	344	121	465
Kanawha Valley Center	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	98	1	99	6	.....	6	104	1	105
Parkersburg Branch	.....	.....	.....	.....	1	1	2	1	3	75	42	117	77	44	121	9	5	14	86	49	135
TOTAL	999	337	1,336	988	389	1,377	1,107	490	1,597	1,278	694	1,972	5,772	2,556	8,328	352	348	700	6,124	2,904	9,028

	4th Year			3rd Year			2nd Year			1st Year			Total			Special			Grand Total		
	Men	Women	Total	Men	Women	Total	Men	Women	Total	Men	Women	Total	Men	Women	Total	Men	Women	Total	Men	Women	Total
Dentistry	27	.....	27	21	1	22	17	.....	17	40	2	42	105	3	108	.....	.....	.....	105	3	108
Law	.....	.....	.....	46	1	47	46	.....	46	62	2	64	151	3	157	2	.....	2	156	3	159
Medicine	14	3	17	46	8	54	37	7	44	51	14	65	148	32	180	.....	.....	.....	148	32	180
Pharmacy	28	5	33	23	6	29	.....	.....	.....	3	1	4	54	12	66	.....	.....	.....	54	12	66
TOTAL	69	8	77	136	16	152	100	7	107	156	19	175	461	50	511	2	.....	2	463	50	513
GRAND TOTAL	1,068	345	1,413	1,124	405	1,529	1,207	497	1,704	1,434	713	2,147	6,233	2,606	8,839	354	348	702	6,587	2,954	9,541

	M	W	T
UNIVERSITY EXTENSION OF COLLEGIATE GRADE:			
University Extension of Collegiate Grade (Not counted elsewhere)	697	1,076	*1,773
University Resident Enrollment	6,587	2,954	9,541
Total University Enrollment of Collegiate Grade	7,284	4,030	11,314
*This number represents those persons enrolled only in extension courses of collegiate grade			
CONFERENCES:			
Administrative Conference on New Media in Education			90
Conservation Education Workshop			55
Economic Education Workshop			42
Education Workshop			15
Elementary School Music Workshop			15
Industrial Engineering Conference			200
Industrial Engineering Conference for Management and Supervision			200
Joint Staff			16
Labor Education Institute			49
Labor Management Conference			62
Life Science Institute			20
Lime and Fertilizer Conference			150
Northeastern Conference on Avian Disease			165
Northern Federation Visual Aids Workshop			12
RAD Workshop			60
School of Banking			115
Tax Institute			250
Tree Fruit Section of Living Resources Forum			40
West Virginia Fine Arts Institute			81
West Virginia Nurserymen's Association			40
West Virginia Potato Growers Association			40
West Virginia Scholastic Journalism Institute			85
Total			1,802
EXTENSION: (Non Collegiate Grade)			
Automation			15
Coal Mining			45
Coal Preparation			6
Hydraulics			52
Total			118
SHORT COURSES AT MORGANTOWN:			
Appalachian Gas Measurement Short Course			674
Appalachian Underground Corrosion Short Course			594
Coal Mining			13
Complete Denture Prosthesis			7
Fire Department Administration Short Course			15
Fire Department Pump Operators School			15
Forced Warm Air Heating and Air Conditioning			85
Orthodontics for the General Practitioner			5
Pedodontics in General Practice			5
Present Day Periodontal Therapy			5
Root Canal Therapy for the General Practitioner			5
West Virginia Industrial Fire Safety Short Course			20
West Virginia State Fire School			141
Total			1,614
GRAND TOTAL			14,848

Resident Enrollment, 1961-62, by West Virginia Counties

Barbour	68	Mineral	97
Berkeley	79	Mingo	51
Boone	46	Monongalia	1,724
Braxton	49	Monroe	35
Brooke	123	Morgan	37
Cabell	80	Nicholas	85
Calhoun	11	Ohio	265
Clay	15	Pendleton	33
Doddridge	31	Pleasants	31
Fayette	142	Pocahontas	55
Gilmer	28	Preston	219
Grant	48	Putnam	32
Greenbrier	118	Raleigh	184
Hampshire	30	Randolph	104
Hancock	210	Ritchie	41
Hardy	33	Roane	51
Harrison	516	Summers	26
Jackson	50	Tayor	81
Jefferson	35	Tucker	45
Kanawha	883	Tyler	34
Lewis	64	Upshur	70
Lincoln	12	Wayne	22
Logan	80	Webster	41
Marion	446	Wetzel	94
Marshall	125	Wirt	13
Mason	37	Wood	373
McDowell	94	Wyoming	66
Mercer	130		
		TOTAL	7,492

By States and U.S. Possessions

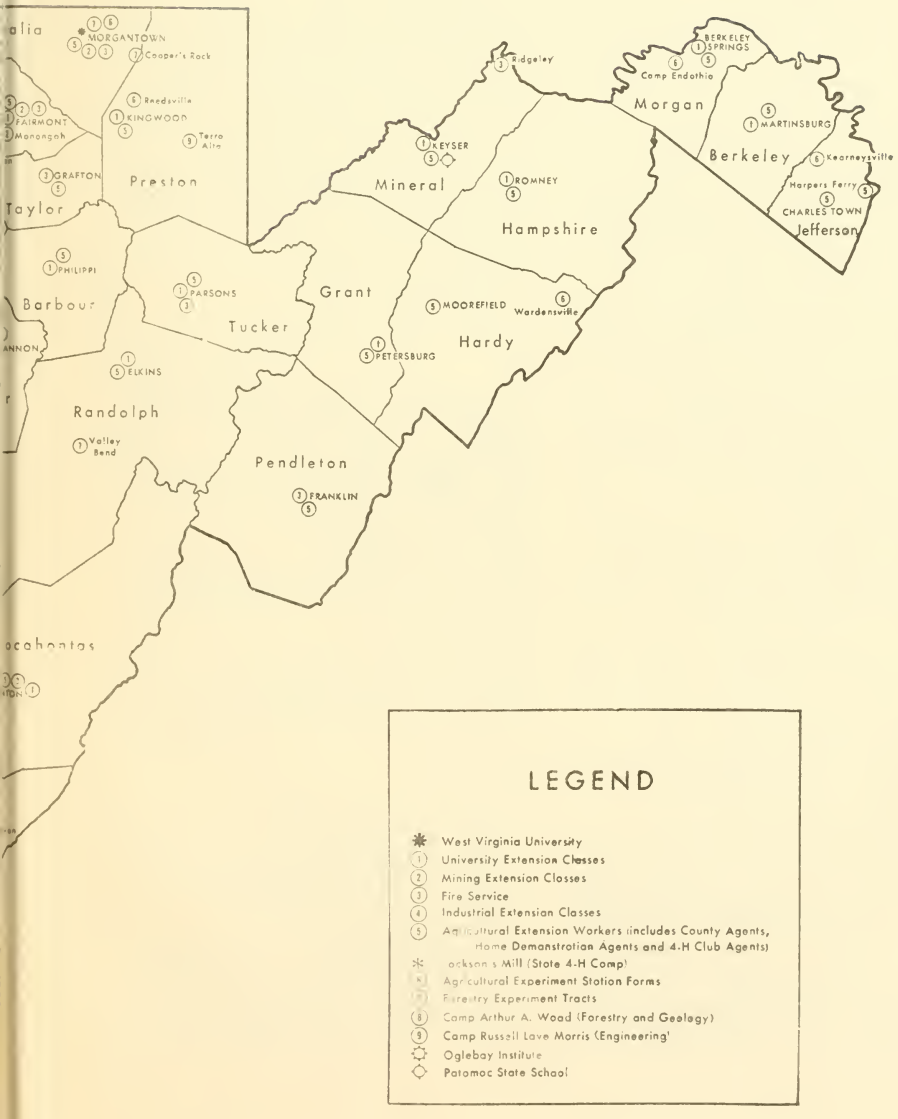
Alaska	1	Nebraska	1
California	7	New Hampshire	1
Colorado	1	New Jersey	107
Connecticut	5	New York	95
Delaware	3	North Carolina	11
District of Columbia	13	Ohio	152
Florida	17	Oklahoma	3
Georgia	7	Pennsylvania	1,226
Idaho	1	Puerto Rico	3
Illinois	11	Rhode Island	1
Indiana	1	South Carolina	3
Iowa	3	Tennessee	5
Kansas	3	Texas	1
Kentucky	11	Utah	2
Louisiana	2	Vermont	1
Maine	1	Virginia	56
Maryland	165	Washington	1
Massachusetts	3	West Virginia	7,492
Michigan	14	Wisconsin	7
Mississippi	5		
		TOTAL	9,442

By Foreign Countries

Afghanistan	1	Korea	4
Brazil	3	Lebanon	2
Canada	2	Liberia	2
Chile	1	Nigeria	1
China	31	Pakistan	2
Costa Rica	1	Panama	1
Cuba	3	Paraguay	1
Egypt	1	Peru	1
England	4	Philippines	2
France	1	Syria	5
Germany	1	Sweden	1
Greece	3	Tanganyika	1
Hong Kong	1	Turkey	2
India	6	Uruguay	1
Indonesia	1		
Iran	5	TOTAL	99
Iraq	2		
Israel	1	TOTAL UNIVERSITY ENROLLMENT 1961-62	9,541
Italy	3		
Jordan	2		

Hancock
Brooke
Ohio
WHEELING
MOUNDSVILLE
Marshall
NEW MARTINSVILLE
Wetzel
MIDDLEBOURNE
Tyler
ST MARYS
Pleasants
Vienna
PARKERSBURG
Wood
WEST UNION
Doddridge
HARRISVILLE
Ritchie
ELIZABETH
Wirt
WESTON
GLENVILLE
Lewis
GRANTSVILLE
Calhoun
Gilmer
POINT PLEASANT
Jackson
RIPLEY
Mason
SPENCER
Roane
Braxton
SUTTON
WINFIELD
Cabell
HUNTINGTON
Putnam
Kanawha
Institute
St Albans
Dunbar
S Charleston
CHARLESTON
Cloy
CLAY
Nicholas
SUMMERSVILLE
WAYNE
Wayne
HAMLIN
Lincoln
Belle
Montgomery
Smithers
Powellton
MADISON
Wharton
Whitesville
Leewood
Clothier
Sharples
Logan
Baoone
LOGAN
Dingess
Holden
Omar
Chelyan
Accoville
Man
Amherstdale
WILLIAMSON
Red Jacket
Minga
Oceana
Montcalm
Roleigh
BECKLEY
Amigo
Mabscott
McAlpin
Saphia
Stotesbury
Foyette
FAYETTEVILLE
Oak Hill
Mt Hope
Loyalhanna
Greenbrie
Wyoming
PINEVILLE
Mullens
Itmann
Summer
McDowell
WELCH
Davy
Coal-wood
Gary
Bartley
Iaeger
Keystone
Ameagle
Mercer
PRINCETON
Monroe

WHERE
WEST VIRGINIA UNIVERSITY
SERVES THE STATE



LEGEND

- West Virginia University
- (1) University Extension Classes
- (2) Mining Extension Classes
- (3) Fire Service
- (4) Industrial Extension Classes
- (5) Agricultural Extension Workers (includes County Agents, Home Demonstration Agents and 4-H Club Agents)
- Jackson's Mill (State 4-H Camp)
- Agricultural Experiment Station Farms
- Forestry Experiment Tracts
- (8) Camp Arthur A. Wood (Forestry and Geology)
- (9) Camp Russell Lave Morris (Engineering)
- Oglebay Institute
- Potomac State School

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UNIVERSITY CALENDAR

UNIVERSITY CALENDAR

1962

June 2, Saturday ..... Alumni Day
June 3, Sunday ..... Baccalaureate Exercises
June 4, Monday ..... Commencement
June 18, Monday ..... Registration for First Term, Summer Session
June 19, Tuesday ..... First Classes, First Term, Summer Session*
July 4, Wednesday ..... Independence Day, a holiday
July 20, Friday ..... Close of First Term, Summer Session
July 23, Monday ..... Registration for Second Term, Summer Session
July 24, Tuesday ..... First Classes, Second Term, Summer Session
August 24, Friday ..... Close of Second Term, Summer Session
September 10, Monday, to September 16, Sunday, inclusive . Freshman Week Program
September 14, Friday, & September 15, Saturday . General Registration, First Semester
September 17, Monday ..... First Classes, First Semester
October 9, Tuesday ..... Meeting of University Senate
October 11, Thursday ..... English Proficiency Examination
November 5, Monday ..... Mid-Semester Reports Due
November 21, Wednesday, to November 25, Sunday, inclusive .. Thanksgiving Recess
December 20, Thursday, to January 2, Wednesday, inclusive ..... Christmas Recess

1963

January 19, Saturday ..... Last Classes, First Semester
January 21, Monday, to January 26, Saturday .. Final Examinations for First Semester
February 1, Friday, and February 2, Saturday
General Registration for Second Semester
February 4, Monday ..... First Classes, Second Semester
February 7, Thursday ..... West Virginia University Day
February 12, Tuesday ..... Meeting of University Senate
February 21, Thursday ..... English Proficiency Examination
March 25, Monday ..... Mid-Semester Reports Due
April 12, Friday, to April 17, Wednesday, inclusive ..... Easter Recess
May 14, Tuesday ..... Meeting of University Senate
May 22, Wednesday ..... Last Classes, Second Semester
May 23, Thursday, to May 29, Wednesday, inclusive
Final Examinations for Second Semester
May 30, Thursday ..... Memorial Day, a holiday
June 1, Saturday ..... Alumni Day
June 2, Sunday ..... Baccalaureate Exercises
June 3, Monday ..... Commencement

*Classes will be held on June 30, 1962.